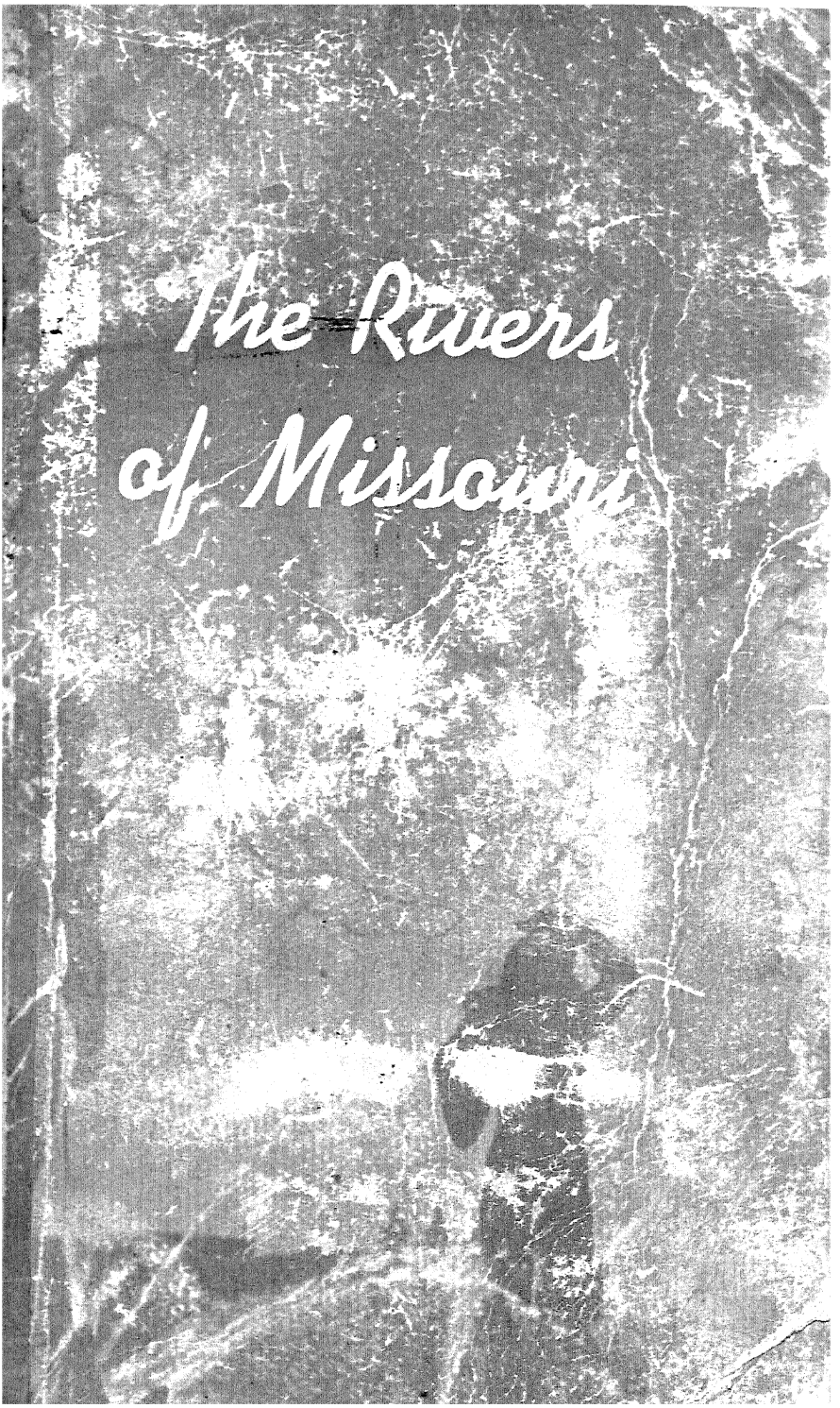
The Rivers
of Missouri

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ABOUT THE COVER OF THIS BOOK

The photograph reproduced on this book's cover was made by Bill Gamble of the Conservation Commission staff. It pictures the center group of the famed Carl Milles statuary, "The Meeting of the Waters," in Union Station plaza, St. Louis.

This fountain statuary symbolizes the junction of the Missouri and the Mississippi, those two mighty rivers into which all the streams of Missouri empty their flow.

THE RIVERS

To those who hear in their hearts the haunting melody of rippling water; to those who dream of childhood days on creek banks; to those who have known and loved them, the Missouri Conservation Commission dedicates

The Rivers of Missouri

The Missouri And The Mississippi

By Dan Saults

The Mississippi river was a pathway of civilization, a road leading into a continent's heartland. The Missouri river was the pioneers' road to the West, to wealth and adventure, to furs and gold and the mountains. All this is obvious history, but without geography history can lose meaning. Geographically a surprising conjecture appears: had early exploration been able to take a different course, the Upper Mississippi would be considered a tributary of the Missouri!

For the present *tributary* drains 530,000 square miles, while the Mississippi to its juncture with the Missouri drains only 171,000 square miles of land. Viewed thus, the Missouri would be the longest river in the world, writhing from the continental divide to the Gulf of Mexico and there disgorging waters gathered from half the area of these United States—plus 550 million tons of silt, sand and soil annually.

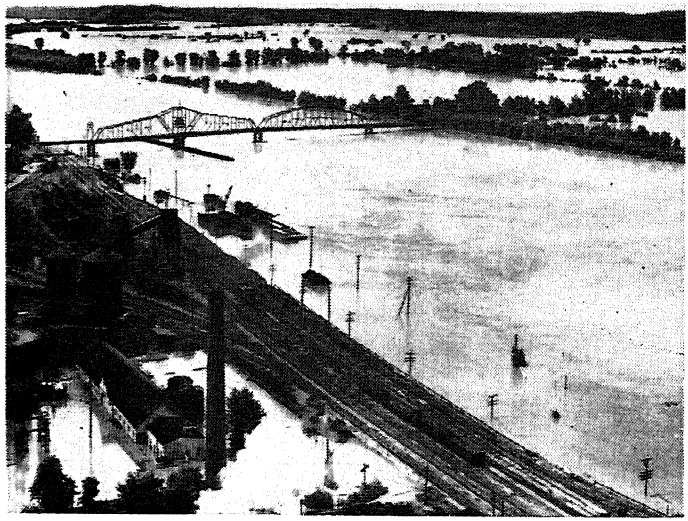
But early exploration came from the north, as French colonial trade sifted down the waterway of the St. Lawrence, penetrated the Great Lakes and found a south-flowing stream. Down it, in 1658-59, came Pierre d'Espirit and Medart Chouart; they penetrated far enough to return with a story of "the great river that divides itself." They had come, that is, to the mouth of the Missouri. These men were followed by Louis Joliet and Father Jacques Marquette, then by Robert de la Salle—who suggested that the Missouri was the main stream and the Upper Mississippi a tributary. Those Frenchmen must have been greatly impressed by such huge, savage rivers, so different from the placid canals of France.

Along the watery track of the explorer came fur traders and missionary priests, following a route to the south. They explored most of what is now Missouri and gave names to many of the rivers they found. Forts sprang up on the rivers and settlements blossomed under the protecting guns. Study the early history of this state and look at the geographical location of those first towns—always they were along the rivers. But this may be found in books; we are concerned here with two great streams. They must be considered both apart and together.

* * *

The Missouri river begins in the junction of three small mountain streams high up in the Montana Rockies; from that juncture, it winds a tortured course to the north, south and east. On the way it drains all or part of ten states and flows through seven of them. It forms the northwest boundary of the commonwealth that bears its name before twisting across the center of that state to join the Mississippi below St. Charles, an interesting little town that was the first capital of Missouri and the first permanent *white* settlement on the river. The Indians lived along the banks long before.

Source and meaning of the river's name is lost in conjecture: possibly it is an Anglicized corruption of a French distortion of an Indian appellation. The stream itself is more highly personalized than even the Mississippi, despite the lyrics written about the latter and the literature of Mark Twain, that old riverman from up Hannibal way. Big Muddy is endowed with intelligence, superhuman strength and personal malevolence by people who live



Untamed and untamable, the Big Muddy has carved the deep, rich valleys and then levied a toll upon their users. The river has broken the hearts and bodies of many people, who still love it in some strange fashion.

along its banks. Bob Zeltner, Glasgow commercial fisherman, expressed an attitude with his statement: "She's a bad actor, that old river; you can't tell what tricks she'll play. Ain't never been controlled yet and never will be." He spoke with a certain pride.

Everyone along the river can tell you its gargantuan whimsies, of cornfields swallowed overnight, steamboats stranded at Camden when the great bend was cut across in 24 hours. They laugh fondly at recollections of the time when a part of a south-bank county suddenly found itself attached to a north-bank county. Near St. Charles, a 70-acre patch of sand lies two feet deep on a large wheat field; the sand was deposited there in a flood, burying land worth $300 an acre. And the miniature Mojave lies several miles from the main channel of the river.

Erratic and untamed, the Missouri has broken hearts, purses and men; it has given a rich and fertile land and it is taking it away. Its waters are dyed with the soil that flows forever through an unstable crevice in the earth. No wonder those who dwell beside it fall easily into Ruskin's "pathetic fallacy" of fearing, loving and hating an inanimate object. For there is an illusion of monstrous life in the Missouri river.

The Mississippi has a very different source than the Missouri, beginning in a Minnesota region of swamps and lakes at an elevation of around 1200 feet, compared with the Big Muddy's fall from a beginning at more than a mile's elevation. Ole Miss begins flowing placidly down to form the entire eastern border of this state, dividing it from Illinois, Kentucky and Tennessee, but the early quietude is rudely disrupted by the Illinois river and permanently shattered a few miles above St. Louis, where the Missouri pours in.

The Mississippi is a romantic stream, particularly in its lower stretches, although Charles Dickens called is "a shiny monster hideous to behold." On its broad waters Huckleberry Finn once floated; the scent of magnolias drifts with the current and fictional darkies chant as they load long-gone packets. On stormy nights the ghosts of painted savages and half-tamed *voyageurs* speed down-river in fur-laden canoes. But all are phantoms now, distant in time as the demon-haunted gorges of the Rhine. And today . . .

Today tugs butt their way upstream with loads of oil and cotton pushed on barges before them; down toward Southern ports drift loads of wheat and the manufactured goods of the North. The Mississippi is still of commercial importance, particularly in the delivery of gasoline and oil, although it no longer handles such traffic as it did in 1852, when 3,000 steamboats visited the Port of St. Louis.

* * *

Exploration of the rivers came from the north but commerce came up from the south. The first steamboat trip up the Mississippi past the mouth of the Ohio river was made by the *Zebulon M. Pike,* which arrived in St. Louis from New Orleans on August 9, 1817. Two years later, the *Independence* ventured up the Missouri as far as Franklin; not long afterward, the *Western Engineer* got as far as Council Bluffs, Ia. But the Missouri wasn't good running. A trip from St. Louis to St. Joseph took about as long as the voyage from New Orleans to St. Louis; Big Muddy's snags and shifting sandbars made night travel a perilous feat. The dangerous stream claimed many a sidewheeler and sternwheeler but "whiskey sunk a third of them and carelessness another third."

At least, that was the verdict of Captain Bill Heckman, who lives at Hermann. Still vigorous and still holding a Missouri river pilot's license at 80, after 64 years on the river, he likes to say: "We used to separate the men from the boys at the mouth of the Missouri. The boys went up the Mississippi and the men up the Big Muddy."

There's a certain justice in the statement. A shallow-draught boat built exclusively for service on the Missouri went to head of navigation at Fort Benton, Mont., 2,300 miles above the mouth, in 1860. Seven years later, 39 boats made the perilous run between Fort Benton and St. Louis, running the gauntlet of a deadly river and hostile Indians to bring out gold.

Life expectancy of boat and crew might not be long but profits were great enough to overcome a natural reluctance toward taking the risks. The *Luella* left Fort Benton in 1864 with $1,250,000 in gold and 230 paying passengers, got to St. Louis safely and netted profits to the owner worth more than twice the value of the boat.

River boats served military expeditions to the Far West, too. That unhappy foray which resulted in the Custer debacle was supplied by the steamboat *Far West,* and Capt. Grant Marsh nosed his 190-foot boat up the Big Horn tributary to pick up the wounded remnants of Major Reno's command, evacuating them back downstream out of the clutches of Sitting Bull's victorious braves.

The pilots of these boats were kings of the river. They were quiet, alert men who drew salaries up to $1,000 monthly and could read the streams as lesser men read books. But their reign was short. The railroads, expanding

after the Civil War, ended packet prosperity; once-prosperous river towns declined, disappeared or found new life (as Hannibal and St. Joseph did) from trains and overland trails.

Yet the settlements along the rivers are numerous still, some of them ghost-haunted and some prosperous, but all touched with the romance of the past.

* * *

Along the Missouri lie St. Charles, Washington, red-bricked Hermann and Jefferson City, with statehouse gripping a bluff; Boonville, whose source was a fort built in the War of 1812; Lexington, where a still-prominent Aull family traces direct ancestry back to John Aull, who opened a store there in 1822. On the unsteady banks of the Missouri rise the skyscrapers of Kansas City and tall buildings of St. Joseph, third largest city of the state and eastern terminus of the Pony Express. These, and scores of little, half-forgotten villages, retain a memory of days when the river that gave them life was a great trafficway. But out from the waterfronts now go only commercial fishermen, past the sites of long-gone wharves puff rare tugs or the boats of Army Engineers.

Yet if these towns are old, as antiquity goes in the Middle West, consider the settlements along the Mississippi river.

North of St. Louis lies Hannibal, still busy and bustling; south of the state's greatest metropolis is a town that lives in the past: Ste. Genevieve, over which two centuries and more have passed. The first permanent settlement in the area that became Missouri, its history begins where fact ends and legend starts. It was founded, probably, around 1735 as a shipping point for French-mined lead from nearby Mine LaMotte; in 1762 it became an outpost of the Spanish Empire in the dizzying political cycles of the territory of Louisiana. Even today the flavor of the town is French as its ancient houses sit on the hills above the river, where floods drove the settlement.

Herculaneum, to the north of Ste. Genevieve, also owes its existence to lead. It was platted by Moses Austin, father of Texas Hero Stephen Austin, as a port for the metal mined at Potosi and Old Mines.

Farther down, where the bluffs begin a retreat westward and the state's deep-south country of cotton and share-cropping begins, is Cape Girardeau; named, says tradition, for a French ensign who settled on the cape *circa* 1704. Verified history begins in 1792, when Louis Lorimier established a town that became a big shipping, milling and educational center between 1815 and the Civil War.

Still further south, geographically and economically, are New Madrid and Caruthersville, huddling from protection against the annual floods behind their earthen levees. There have been several New Madrids, all of them offspring of the mating of a restless river and an ambitious people. The town, originally planned as capital of a buffer colony established by the Spanish, was laid out around an earlier trading post in 1789 by a Revolutionary War colonel named George Morgan.

This colony, founded upon a conservation rule that no trees were to be cut without permission and game shot under legal restricts, lost its charter as a result of political maneuvering between a Kentucky governor, jealous of New Madrid, and the unstable Castilian rulers of Louisiana. The great earthquake of 1811 ruined the original settlement, driving out the people. Other

Here grew a thick stand of wheat—before the freakish Missouri cut through and created a miniature Mojave, depositing sand to a depth of two feet over 70 acres of rich soil.

settlers came in, but the shifting Mississippi forced the town to be moved at least three times before the War Between the States.

Caruthersville began existence as La Petite Prairie, a French trading post, that was washed into the river about 1794 and then, rebuilt, was devastated by the earthquake 18 years later. Today's town came into being at its present site in 1857; it still ships cotton, wood products and sand.

These are a few of the river towns, creations of the stream that built them—and then demanded payment in lives and property. For the Missouri and the Mississippi have given, and they have taken away. They have built the rich valleys—and snatched unto themselves the toil of men in those valleys. They have been the road of the pioneer—and the highway of the exploiter. They have given wealth and prosperity—and they have levied a toll of destruction upon mankind for his sins against their watersheds.

* * *

In their own waters, neither the Missouri nor the Mississippi offers much to the sports fisherman, outside the overflow and navigation pools. The species taken are chiefly rough fish, gathered in by commercial fishermen. Huge catfish live in these waters, some of them weighing more than a hundred pounds, and there are legends of 300-pounders. Other species taken include carp, buffalo, drum, gar, sturgeon, paddlefish, suckers, quillback, bullheads, eels and mussels. Commercial fishing is allowed by Conservation Commission regulations in 570 miles of the Missouri and 490 miles of the Mississippi.

Such big rivers are, of course, waterfowl habitat. The Mississippi flyway is probably the greatest of the five north-south routes for migratory birds.

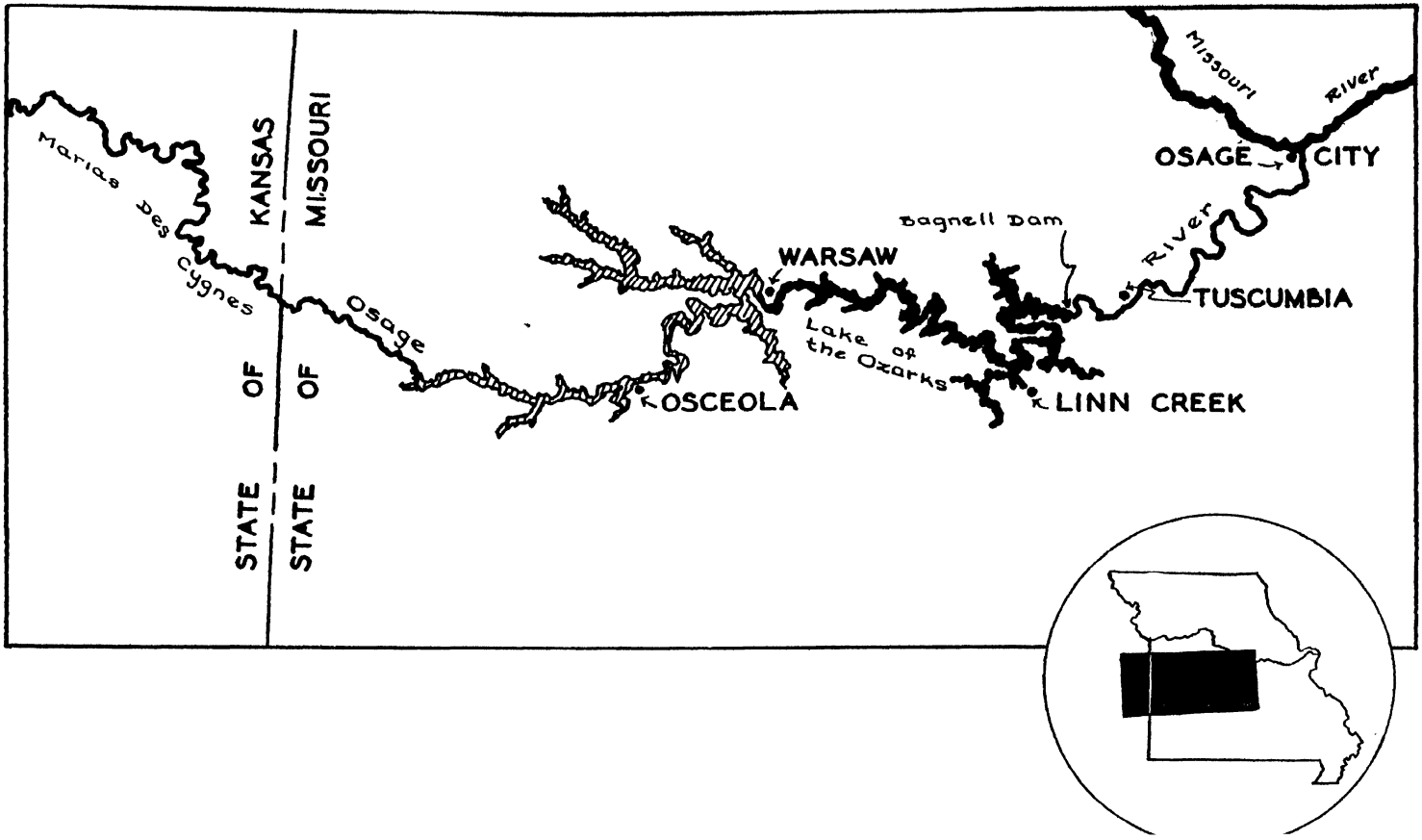
In the Portage des Sioux territory, above St. Louis, yacht clubs are based on the Upper Mississippi, above the Alton lock and dam. There, a few excur-

sion boats, form the recreational aspects of these huge streams. They are not for the casual fisherman or the unwary boatsman.

In that same Portage des Sioux territory, where the rivers bend toward each other and flow side by side before mingling, there is a delta land of swamps, shallow lakes and deep, rich soil. There, during an early-summer flood, swollen Missouri waters decided to take a short cut to the Mississippi. Almost playfully, the torrent cut a new channel—and then went away again, back to the old stream bed. But it left, across the fertile farm land, a gulch that had swallowed houses and roads, a crevice 100 yards wide and six to 60 feet in depth, that wandered for miles across the bottoms. It was just one of the whimsies of Missouri's great rivers, whose yearly surges cause many million of dollars in annual damage.

These, then, are the wild, unruly parents of the rivers of Missouri. The children that feed them are varied in their nature, with an individuality of their own, traits that set them apart from other streams, qualities that call forever to the wanderers who have left their banks. Here is only a backdrop before which the rivers of our state can play their parts.

Among the last of the old rivermen are Capts. Sam and William Heckman, who live at Hermann. Each of them has held a pilot's license for sixty years; they can remember the great old days on the river.


Missouri River
OSAGE CITY
Bagnell Dam
WARSAW
River
TUSCUMBIA
Marias des Cygnes
KANSAS
MISSOURI
Osage
Lake of the Ozarks
OSCEOLA
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Through Land Of The Osages

By Carl Noren

If you had been a member of the Lewis and Clark expedition pushing its way up the Missouri river, you would have arrived at a large tributary where you would have met men coming down this strange, wild stream on rafts. These men would have been traders and trappers, their rafts loaded with "furs and peltries." And if you had been a prophet, you could have told these men that some day there would be a railroad along the base of the bluff at the confluence of these two great rivers. A few miles upstream, you could have told them, there would be a large steel bridge, and highways with automobiles.

And the traders and trappers would have mused, "This chuckle-headed government-worker has been in the back-country too long. He needs to return downstream and rest awhile."

Yet, today, it seems almost as impossible that less than 150 years ago only the most adventurous white men were traversing this country. And they traveled by raft, keelboat or canoe into the Land of the Osages.

* * *

Before we look at the Osage river, it might be well to look at Man, for Man has been the most important recent influence in making this stream what it is today. Man seems to be a mass of dissatisfied matter. He is not content to leave anything in its natural state; in the back of his mind there is a voice that keeps asking: "I wonder how I can change that?"

Most of the changes he does accomplish he confidently labels "Progress" but, as he grows older, the voice queries less loudly and the things he wanted to change begin to look good as they are. It is too late. By then, he is overruled by younger men, whose eyes are searching eagerly for untouched fields where they can speed the wheels of "Progress."

Sometimes it takes the perspective of many years before Man can look back and see whether the things he has done represent real progress, or whether it is additional evidence that the evil men do lives after them.

All conservationists are often in a difficult position, in that they must sometimes oppose this human desire to change the natural order of things. Conservationists know that nature can be managed to the advantage of man; they also know that too much tampering with this natural order can exact a costly price, although it may be years before the bill comes due. Right now, man is paying for his misuse of the soil and forests in some areas. He will be bankrupt when the full price is paid.

It is not yet clear how far we can go in changing nature's pattern in the management of our water resources without paying dearly for it in the chain of events that may be precipitated. We have tried mightily to alter the natural character of our streams. Where they run swiftly we've slowed them, where they run slowly we've speeded them, when they're wide we've narrowed them and when they are narrow we've widened them. And after this, we've sometimes wished we'd done nothing with them.

There have been times when men have wished for all these things for the Osage, and times when they wished nothing had been done to it.

Now we're going to take a look at the river itself, but instead of winding along its course and describing what is to be seen on the banks we're going to look a little further. We'll try to get a glimpse of its history as well as its physical characteristics. We'll try to understand some of the things that have influenced its development in the past and the present, to make some guesses about what the future holds for it.

If the Osage is viewed this way, it may help to clarify opinions about the type of development needed on some of our other Missouri rivers. The Osage has been the subject of much study, and plans made for it represent compromises of many viewpoints. The stake of fish and wildlife interests in the basin is large, but not dominant. On some of our other rivers the interests of sportsmen, foresters and other conservationists may be the most important factors to be served. But if they are to be served, they will have to know what they want and then make themselves heard by those who plan river development. Perhaps this view of the Osage can do more good in that the estimate of what the future may hold for this stream will help all of us decide what should be done on other rivers.

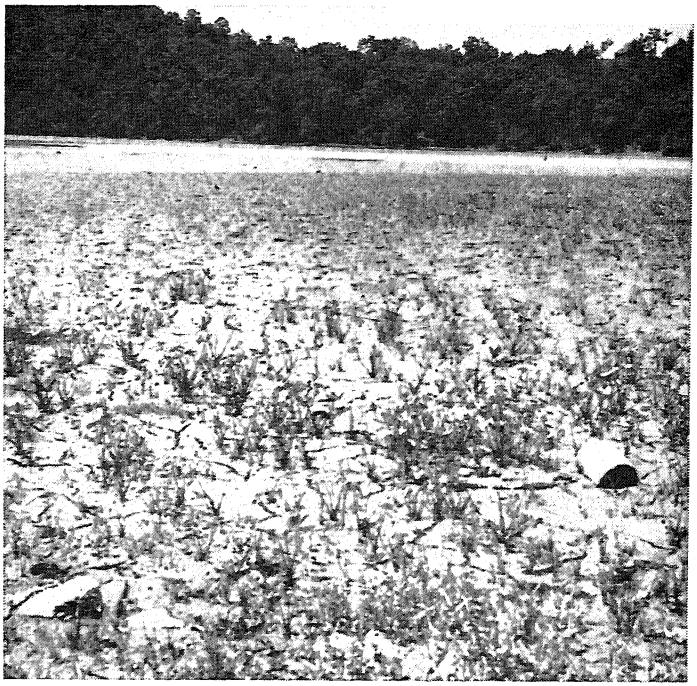
The river takes its name from the Osage Indians, a tribe of Siouan stock. There were three bands in this tribe, known as the Great Osage, Little Osage and Arkansas, each band named after the rivers that ran through their territories. The name of Osage probably is derived from the French version of the Indian name Wa-zhe-zhe.

The State of Kansas was not content with Osage, however, and that portion of the river flowing through Kansas has been officially designated as the Marais des Cygnes (commonly pronounced mare-uh-duh-seen) by their Legislature.

It seems probable that the Kansans did not adopt the name out of perversity but rather because the legislative body appreciated the beauty and fitness of that early French name for their river. In Kansas, the Osage rises in and runs through prairie land, much of which was marsh in earlier days. The early French probably saw large flocks of swans resting on these marshes and appropriately named the stream Marsh of the Swans. But, as the river flows eastward, the country becomes more rugged and wooded; the river then changes both its character and its name.

Roughly two-thirds of the Osage basin lies in Missouri, and the river winds along for 515 miles from its rise in east central Kansas to it mouth on the Big Muddy. About 305 miles of this twisting course is through this state. In size alone, the Osage basin ranks as one of Missouri's most important, for the entire watershed has an area of 15,300 square miles, of which 11,000 are in Missouri. The only other basin draining a greater area in this state is the Missouri basin—of which the Osage is a part.

This vast area was once the hunting ground of the Indians, and it wasn't until 1808 that the Great and Little Osage tribes ceded a majority of their territory in what is now Missouri to the United States. Perhaps the White Man's ways were too confusing and the Indians got out of the game because the cards were being dealt too fast, for before the Osages ceded this land it was regarded—by the whites—as belonging to France. It passed to Spain in 1763 and back to France in 1800. In 1803, the United States acquired it by the Louisiana Purchase. The Osages yielded the land a few years later but they continued to hunt over it for at least 20 years more, which seems to indicate they were adapting themselves to the White Man's methods of operating.

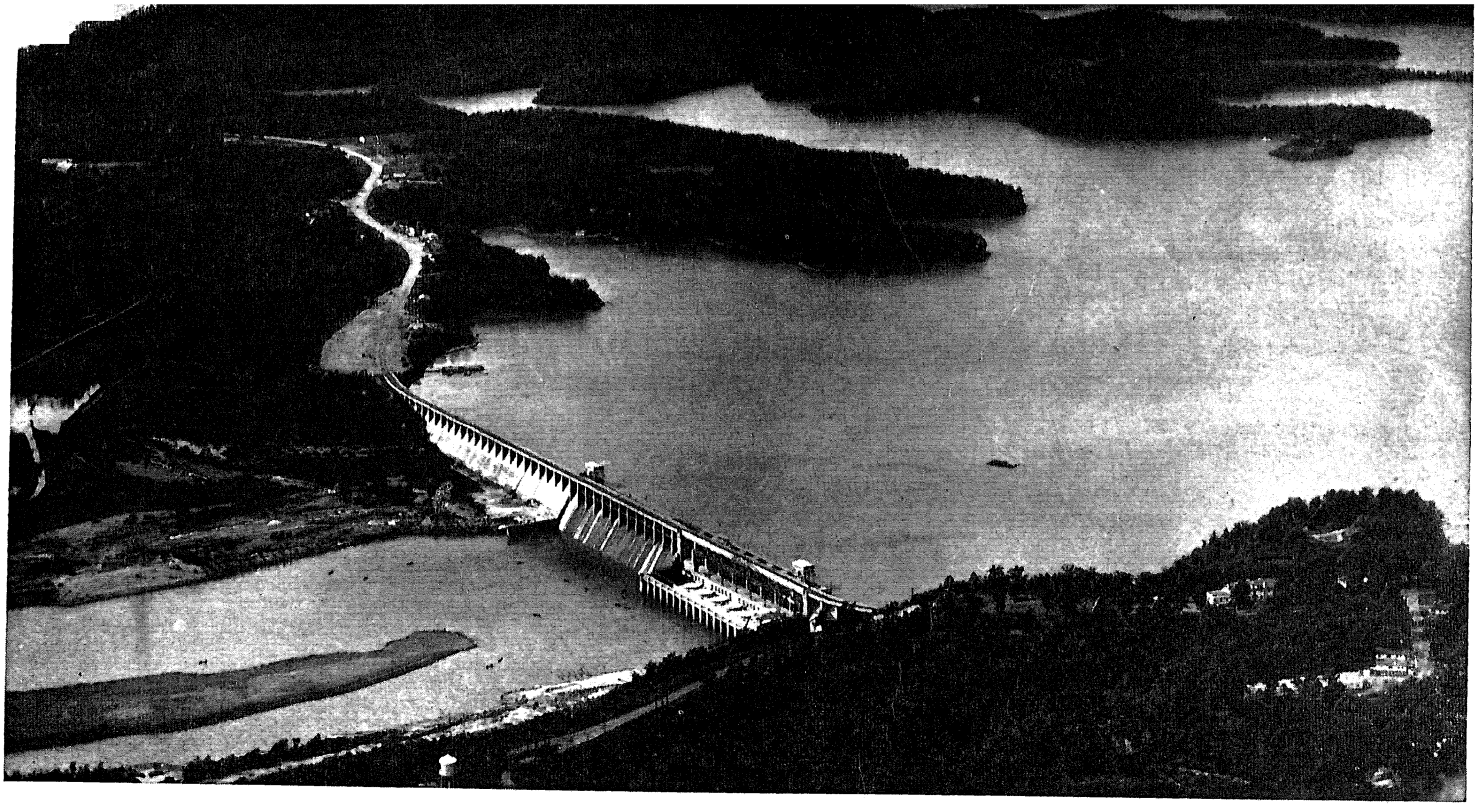


A by-product of fluctuating water levels. There is little recreational value in this mud flat.

At the time this territory was acquired, it has been esimated that trading with the Osages amounted to $28,000 annually. The French had been visiting this country as early as 1695, but traffic had not been large. After the United States took over and the area began to open up, Auguste Chouteau began expanding his operations in the basin. Chouteau, a well-known name in St. Louis, was a fur trader whose keelboats carried goods up the Osage as far as the river stage would permit. Beyond that point, goods moved by freight wagons to points in the interior.

Although the first steamboat slipped into the St. Louis waterfront in 1817, it was 20 years before such boats moved up the Osage. The river proved as treacherous as the Missouri. That first year of steamboat traffic on the Osage, newspaper accounts show, the steamboat *North St. Louis* was stranded by a rapid fall in the river stage and a number of boats were sunk or badly damaged as they tried to navigate the tortuous channel in later years.

But a new era had begun, opening the country with great speed. The towns of Linn Creek, Osceola and Warsaw prospered as shipping terminals for the steamboats and freight wagons. This period also marked the beginning of the great exploitation of land and wildlife. Cargo records of boats coming out of this country show they carried hundreds of venison "hams" in a single load, along with deer skins baled for shipment, and hundreds of bales were shipped yearly. Although the fur total floated out each year probably didn't approach the number coming out of the basin today, there have been losses in quality; otter and beaver pelts were common in the trade of that period. (Today the otter are gone, as the beaver was for many years, but the



Bagnell Dam impounds the waters of the Osage river as a power project and forms 60,000-acre Lake of the Ozarks, one of the world's larger artificial reservoirs, and a summer playground for the Middle West.

latter is coming back. Some day it may again add to the economy of the region.

Steamboat traffic had barely begun to provide a cheap and reasonably certain method of transportation before efforts were made to improve the river for navigation. Snags were removed, overhanging trees were cut as a hazard to the high smokestacks of the boats. An association was formed to build wing dams of brush and stone to back up water for shoal navigation; later the State appropriated money for river improvement. But maintenance for navigation is a never-ending job and costs are high. In less than twenty years, the program was taken over by the Federal Government, and maintenance for navigation remains today a Federal function.

This history of the Osage as an artery of transportation and commerce is an important one, as it provided the first highway for settlement and development of the basin.

A shift in emphasis in transportation becomes apparent about the time of the Civil War. This is reflected in a battle for the Missouri Pacific railroad bridge on the lower Osage, when Confederate troops defeated two companies of Union troops. The Southern forces attacked from the east early in the morning of October 6, 1864, and the entire Union command at that end of the bridge surrendered. The Northern company in a blockhouse on the west side of the bridge evacuated when further resistance appeared futile.

Although railroads contributed to the decline of river transportation on the Osage, it was the development of a good highway system throughout the basin after World War I that seems to have finished the Osage as a stream having much value for transportation. However, there are people who stand staunchly for its potentialities for navigation, and a lock and dam is still in operation seven miles above the mouth of the river. To this day, the Osage river is *legally* a navigable stream from its mouth to a point shortly below the town of Warsaw. This is a strange situation, since Warsaw lies approximately 170 miles above the mouth of the river, and today it is impossible to go by riverboat any farther than Bagnell Dam, which lies about 75 miles above the mouth. River transportation must end here, since there are no locks to permit boats to move up into the Lake of the Ozarks, although consideration was given at one time to the construction of a crane that could carry boats from the river over the dam.

This Lake of the Ozarks has brought changes to Osage river fishing. The dominant sport fishes in the lake today are white bass and crappie, species that never were important in the natural river. Near the mouth, the stream produces some fine catches of giant catfish and is ideal for "jugging." The river also offers some excellent walleye (jack salmon) fishing in the vicinity of Tuscumbia and for a stretch a few miles below the dam. Back in '31 and '32, the biggest run of walleye on record occurred on the Osage above the lake, and large numbers were taken from concentrations that piled up at the power dam at Osceola. This unusual run probably was caused by the formation of Lake of the Ozarks, but why the lake had this effect is not clear.

The big impoundment has brought many other changes to the Osage country. Although Bagnell Dam was built as a power project, its other influences probably have had more importance. The lake has grown into the state's largest resort development, with a great network of roads. The area's economy previously rested largely on river-bottom farming, all of which has disappeared beneath water, to be replaced by commercial enterprises based on fishing, boating and swimming. Such developments are not surprising, since

there are few large lakes, either natural or artificial, in Missouri, and this one satisfied a real demand. It is probable that other large reservoirs in the state will not enjoy such intensive use if they should be developed.

There is a possibility that another type of reservoir may appear on the Osage some day. For years there was talk of, and planning for, a large flood control reservoir to be constructed at Osceola. This proposed impoundment was part of a system of such structures planned by the Army Corps of Engineers for the basin. In addition to flood control, it was to provide storage for water that would be released for navigation on the Missouri and Mississippi during periods when the flow of these streams was critically low.

This plan was opposed by many local interests, and state agencies objected to some features. An effort was made to work out a plan that would offer flood control without so much inundation of good farming land and one which would also reduce losses of wildlife and mineral resources. After months of study by Federal and State agencies, a new blueprint was proposed that called for a land improvement program in the uplands, including such things as soil erosion control and reforestation, as an aid to the reduction in flood run-off. The plan of reservoirs was modified and the location of the reservoir for the Osage river was moved downstream. The new reservoirs proposed for the basin would inundate about 30% less acreage of land than the original project, and the location of the reservoirs was planned so that less fertile land would be lost.

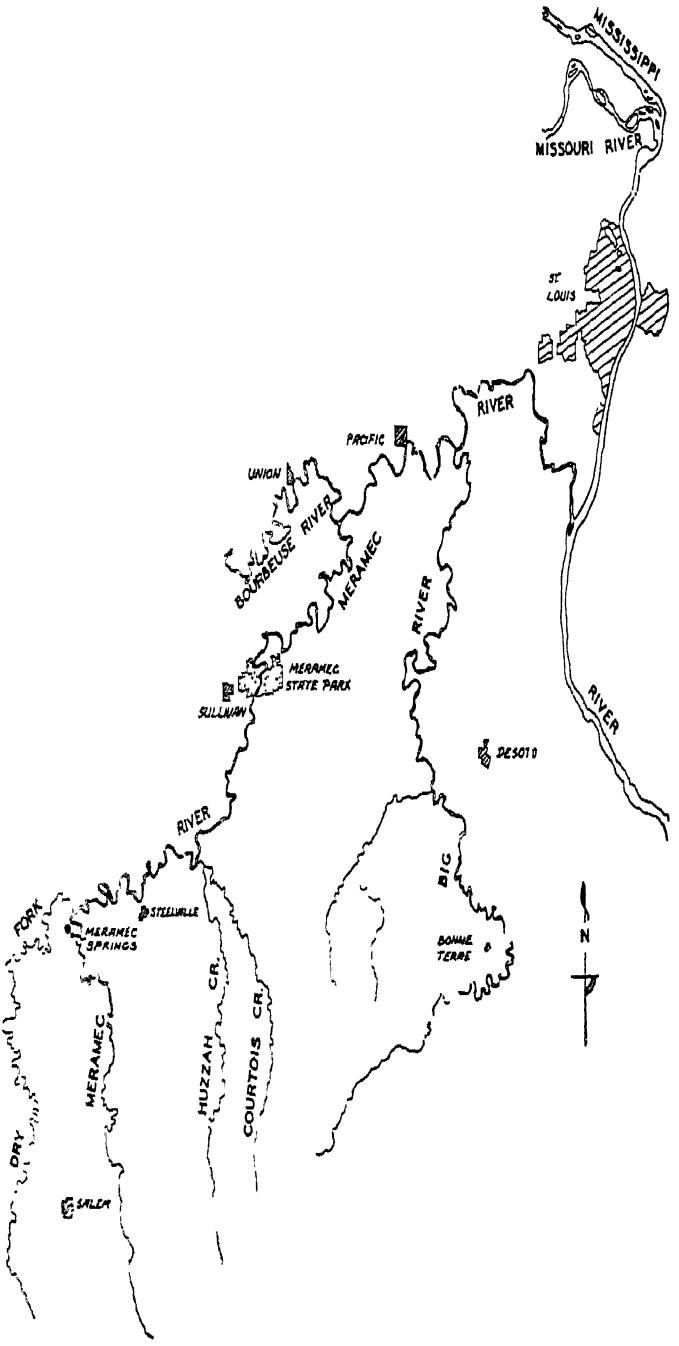
If this new setup were to be adopted the Osage would see another big change in its character. A dam would be constructed about three miles above Warsaw, and this would form a permanent pool that would extend about 50 miles up the channel. In times of extreme runoffs this pool would extend about 120 miles up the present channel, but it would be rare for it to reach the full-pool stage. If the land improvement program were put into effect, misused land would be treated and healed, and a program of reforestation, which would include fire protection and controlled cutting, would be carried out. The plan is designed to afford complete flood protection to areas downstream, and to reduce crests on the Missouri river.

It has been many years since the Osages have been on the war-path, but the Indians' big river has carried on for them. Many times since the redman moved west, the Osage has donned war-paint and ravaged the country around, for the stream lies in one of the worst storm centers in the United States, and the fury of this river when raised from her bed makes strong men wish she were asleep. But, like the redman, she has been abused, and she has had reason to revolt against the harsh treatment given her lands. Look well at the Osage, for much as she has changed already, it may well be that some day you'll be saying, "Why, I remember when . . ."

* * *

Is yours the blood that flows most happily when held in even pulse beats, that wants nothing of uncertainty and the most in comfort and security? If you are one of those, you probably will be happy with the quiet that seems to be the planned destiny of the Osage.

Is yours the blood that goes as a river, that is restless and eager to be moving? Do your veins run with a stream that rushes over rocky shallows, and eddies meditatively over pools that show some depth? Then the prospects of stability of the Osage may sadden you. But there are other streams that have a heartbeat in tempo with your pulse. May nothing take that heartbeat away!


MISSISSIPPI
MISSOURI RIVER
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MERAMEC
RIVER
MERAMEC STATE PARK
SULLIVAN
DESOTO
RIVER
RIVER
BIG
STEELVILLE
FORK
MERAMEC SPRINGS
BONNE TERRE
N
HUZZAH CR.
COURTOIS CR.
MERAMEC
DRY
SALEM

The Meramec-St. Louis Playground

By Bill T. Crawford

From a little valley just south of Indian Trail State forest in Dent county, hundreds of seeps and bubbling springs emerge to unite and flow westerly as a clear, cool brook called Watery Fork. A larger channel, carrying much or little water—and often none—rises seven miles northeast of Salem and courses north to receive Watery Fork. There is the birthplace of the Meramec river. Here the water begins its journey through a tortuous and meandering channel that runs generally northeast for 240 miles until it empties into the mighty Mississippi just below St. Louis as a flood-plain stream about a hundred yards wide.

As the Meramec river wends northeast from its source, it becomes gradually larger; springs eddy from the sands of the stream bed or spill from the base of sheer limestone bluffs or ledges to develop its growth. About thirty miles from the source, Crooked creek from the east and, a few miles downstream, the inflow from Meramec spring swells the river to twice its size. Other large branches, so numerous in the next thirty miles that some remain unnamed, change the river into a major stream. Then the largest headwater tributary, the Courtois-Huzzah creek, empties its limpid water into the deep green of the Meramec; they mingle and flow on to receive Brazil creek from the right.

With an impression of a big river, the Meramec swirls on through Meramec State Park, past the Meramec Caverns, and receives Indian creek and the Little Meramec river from the southeast. In a few miles the green waters are clouded by the confluence with the Bourbeuse river, a major tributary flowing in from the west. As these waters mix into a still darker green, the river swings on, meandering in a wider valley bordered by limestone bluffs or steep, high hills. Now the river has become a series of long, wide pools connected bv short, fast riffles.

About twenty-five miles downstream from the Bourbeuse river confluence, Big river empties into the Meramec. This second, and last, major tributary, which has its source far to the south in the granite regions of Washington, Iron and St. Francois counties, empties in from the right. The Meramec becomes still wider and more sluggish as it emerges onto the Mississippi floodplain, and it wends its way southeast past St. Louis and into the Mississippi river some thirty miles beyond the mouth of the Big.

Despite its comparatively small watershed of 3,980 square miles, the Meramec is a greatly diversified basin draining all or part of fifteen counties in east central Missouri. When discovered by Father Gravier on October 10, 1700, the region was thought of principally as a fabulous area for lead, iron, silver, and gold. Rumors carried to France that these Missouri mines on the Meramec river contained gold and silver; such reports are said to have given rise to John Law's famous promotion scheme, the Mississippi Bubble. To this day, the Bonne Terre-Flat River region has remained one of the world's largest lead producers, but the high grade iron deposits near Meramec Springs and Sullivan have been largely exhausted.

The mining of barite in the Potosi area also ranks high in national production. Aside from the mineral production in the Meramec region, the watershed is heavily forested and produces great amounts of hardwood and shortleaf pine. Agriculture and farming conditions, though highly important, vary greatly over the region, ranging from the livestock grazing operations in the hills and timber, to an intensive soil cultivation found in the broad floodplains of the Meramec and its major tributary rivers, the Big and Bourbeuse.

During the development of the Meramec region, one outstanding phase has shouldered its way toward the front. This has been the wildlife and recreational resources of the area. For years the lower Meramec, from Valley park to the mouth, has been an informal St. Louis playground. Thousands of people seeking a touch of the outdoors pour into this area. Summer homes and cottages by the hundreds have been constructed on the Meramec and its tributaries. The question often comes up as to what the visitor to the Meramec region can expect to see or do during his stay there. Of course, that question depends to some extent on the individual's interests, be they camping, hunting, fishing, float trips, historical sights or photography.

For a camper, the Meramec offers unexcelled sites. Many of the big limestone cliffs have interesting caves and springs which take hours of exploration to cover. Imagine coming down the river and looking up at a 200-foot bluff, its face dotted with cave openings. These are common in the area.

Too little known is Meramec Springs, between St. James and Steelville, just off State Highway 8, where a great blue-hole spring gushes from under a cliff and pushes its way down a beautiful, shade-arched channel into the Meramec. For the fisherman, trout furnish the particular sport here, but as soon as the spring joins the river, almost any type of native bass and other game fish are available.

There are more than 40 major springs located over the region, most of them well worth visiting, and this is a canoe paradise. For an unforgettable trip, put a boat in at the junction of Dry Fork and the Meramec and float to Meramec State Park. Along the way, there will be plenty of white water for speed, deep, slow water for the leisurely casting of your fishing line, good camp sites, and a new landscape around every bend of the river. Beaver are increasing very rapidly along the river and it is likely that you will see one at work. In the evening, a person with good eyesight might spot deer coming down to the fords for a drink and to browse on the succulent shrubs and plants in the valley. Squirrel and duck hunting provide abundant sport in season and shooting from a moving canoe furnishes something extra in the way of a sensation. Wild turkey may occasionally be seen or heard along the river if you manage to remain unheard and unseen yourself.

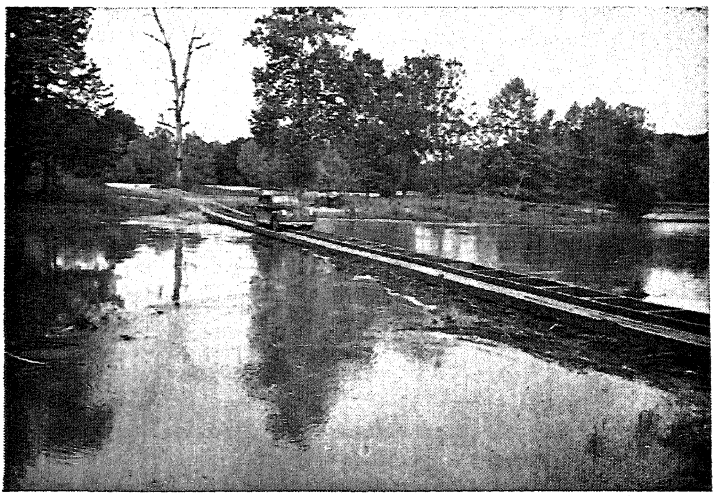
If a visitor is inclined toward historic sites, a visit to the Potosi-Fourche de Renault and Old Mines area in Washington county will furnish material for weeks of interesting study regarding early French settlements and industry.

The individual who is particularly interested in somewhat exotic agriculture would do well to visit the Rosati and Steelville communities during the grape season. Here hundreds of acres of excellent vineyards are carefully tended by local growers. A grape festival held each year in September at St. James is a highlight of the harvest season.

A visit to some of the old grist mills on Big river in Jefferson county takes a person back to the days when these local industries were the very center of

The lower Meramec is thickly dotted with cabins and boatlandings. On summer Sundays swimmers and boaters jam the stream in this St. Louis playground.

"Hog-trough" bridges cross the upper Meramec; this is one of six in a relatively short stretch of the river near Leasburg. Float-trippers hate these bridges, for obvious reasons.



community life. A total of 31 dams and mills are found over the Meramec watershed, and the examination of any one of them is an enlightening experience.

To fully appreciate and better understand the Meramec region, it would be well to consider one of its outstanding problems: a prevailing condition that ultimately will change the river and its watershed into a less desirable place to live. When the first white man looked upon the river he saw a beautiful stream with deep, long pools and fast riffles flowing down a densely wooded valley. The high banks, matted by vegetation and drapes of rootlets, confined the swift current to a channel that remained relatively narrow for its depth.

Floods then, as now, came to the Meramec and its tributaries after heavy rains in the watershed, but the consequences were different. The Meramec, like other streams, has a flood-plain which is a natural part of the stream and is so named because it serves as a lateral reservoir for holding flood waters in excess of that carried by the channel. Flood waters spreading out over the valley and slowed by dense vegetation drop their load of silt on the earlier deposits of gravel and sand. The open channel, confined by steep banks, sustains a swift current whose force dig pools and prevents the deposit of sand and gravel in the stream.

It was only a short step in time from the natural condition to the condition found along the upper Meramec and tributaries at present. After the hills and bottom lands were cleared by lumbering and for the purpose of farming, the change from the natural condition was rapid. Removal of trees, annual burning of woods and cultivation of slopes exposed loose, gravelly soil to violent water action, and sheets of gravel were swept into the tributaries and main stream. The flow, unable to carry such a burden of gravel, dropped it in the quieter stretches of the pools, thus filling them.

The second step in stream destruction from gravel came when clearing of bottom lands at some distance from the stream removed the barrier effect of the trees, so that instead of quiet backwaters, the current became as swift over the cultivated fields of the flood-plain as it was in the channel. A great volume of moving gravel was spread on the fields and also in the channel, where the current was slowed by the flow of water on the flood-plain. Such water distribution resulted in the channel becoming more shallow after each seasonal high water.

To this destruction of stream and field, another land abuse added its bit. River banks cleared of trees and overgrazed, or cultivated to the very edge of the water, exposed gravel deposits laid down centuries ago and thinly covered with silt. During high water these mellow banks were cut into, and tons of once stable gravel and soil were fed into the swirling waters. As the channel grew wider from the bank cutting and slides, the water became more shallow, in some places only a few inches deep. Where great log rafts used to move over this channel, a canoe must now be polled. In the upper tributaries, wide, barren flood-plains of white chert gravel often make it necessary for farmers to dig down into the stones to get water for their stock. The Courtois-Huzzah creek and Big Indian creek are conspicuous in this respect during the dry period of the year. It is difficult to believe these were once deep-running streams.

Because of its size, the mainstream of the Meramec has not yet reached an advanced stage of gravel filling, though several of its tributaries have been destroyed. The headwaters are badly graveled but the middle and lower sections are only moderately affected. As pool depth and area have been

reduced to some extent, however, habitable water for fish has decreased, followed by a drop in fish production.

Must the entire Meramec river succumb to this filling, so that in time there will be no fishing waters, swimming holes, float stretches or even permanent stock water?

The answer to this question can and will be '*yes*'—unless the folly of land misuse and abuse is realized and nature is aided in mending the damage.

Is there really a workable solution to this important problem? Yes—by proper and wise use of the land. Man, cooperating with nature, can bring about a remarkable improvement in streams. Leaving the work of channel repair to nature, let us see what man can do in the watershed and along the stream.

The first approach to stream improvement should be on the hills and slopes of the watershed, where sheet erosion and gullies in cultivated fields move vast quantities of soil into the streams. Here we should reflect that those practices necessary for saving the soil on which livelihood depends is of primary importance, and that stream improvement is the secondary gain. To save the soil is to save the streams and this can be accomplished by cultivating only the gentle slopes, terracing, contour farming, strip cropping, substituting forage crops for row crops, reforesting and preventing wood fires and overgrazing.

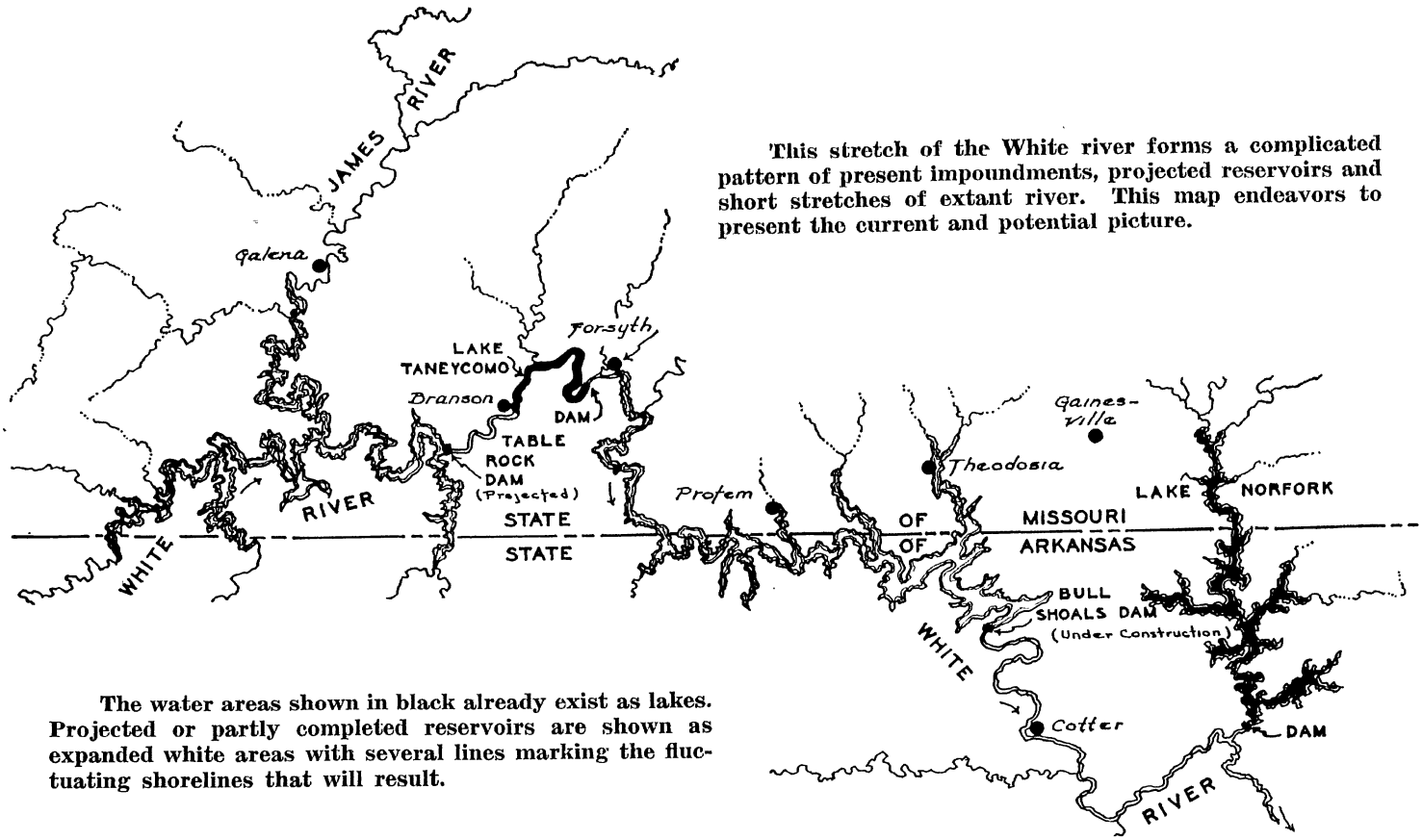
After the soil movement streamward is stopped, man can help re-establish the stream channel. Brush and tree-lined fencerows running across the bottom fields will slow the current on the flood plain and speed it in the channel, thus saving the fields from flood erosion and deepening the main channel. If a dense border of trees is left all along the banks of the stream, bank cutting will be negligible.

After erosion of the hill land ceases and stream banks become stable, the gravel, sand and silt in the stream will be cast out during high water, and *the stream will cleanse itself.*

In fewer years than we realize, and if we will put ourselves to the task, the Meramec river can have many of the natural conditions it possessed when first settled by our forefathers.

Does the Meramec have a future?

That question will have to be answered by the people who live within its watershed—and by all the rest of us in Missouri. And we shall have to supply the answer soon.



This stretch of the White river forms a complicated pattern of present impoundments, projected reservoirs and short stretches of extant river. This map endeavors to present the current and potential picture.

The water areas shown in black already exist as lakes. Projected or partly completed reservoirs are shown as expanded white areas with several lines marking the fluctuating shorelines that will result.

Swan Song Of The White River

By Harry Bruton

The White river and the Ozarks—land of contrasts and mystery—smooth winding roads in unspoiled country—blue haze on the wooded hills—bald knobbers—large caves—cold springs—clear streams—Lake Taneycomo and Lake Norfork—country-cured hams—sorghum molasses—john boats—float fishing—"Shepherd of the Hills" country and "Land of a Million Smiles." So sing the brochures. And they sing the truth!

The White river rises in the highlands of northwestern Arkansas, enters Missouri in Barry county and arches its way with many twists and turns through four counties of southwest Missouri. It reenters Arkansas in Marion County and flows southeastward to join the Mississippi at the end, through several channels in marshy forest land. It is the parent stream of most of the Ozark watershed in two states.

Total length of the river is approximately 500 miles; the drainage area is about 6,000 square miles, most of it forest-covered upland, dotted with small dairy and stock farms and lightly populated.

The origin of the name given the principal Ozark stream seems to be unknown, but probably it was prompted by the many stretches of fast, white water. This is a beautiful stream flowing through a mountainous country whose many strange traditions were made famous by Harold Bell Wright in his once-best-selling novel, "The Shepherd of the Hills."

A multitude of clear hill streams and large springs feed the White river but the principal tributaries that join it in the Missouri Ozark region are the James, Kings, Long, Swan, Little North Fork, Beaver and North Fork. Largest of these is the James, which rises in Webster county and flows through Greene, Webster and Christian to join the White in southern Stone County. It is approximately 125 miles long and drains an area of 1,460 square miles. Other rivers, such as the Current, Black, North Fork and Eleven Points, also flow into the White but mingle their waters in Arkansas.

White river has been called the patron saint of the Ozark region. With its strange, wild border of wooded hills, the river is a major resort attraction for the entire midwest. The early pioneers of the river basin settled in the rich, narrow valleys of the region and built their homes near its fine springs. Most of these early settlers were independent, freedom-loving Anglo-Saxon people from Kentucky and Tennessee and many of them were attracted to the locality by its abundance of game and fish, rather than its agricultural possibilities. Until only a few years ago it was a self-sufficient region of log houses in the rural sections, of rail fences, water mills, hound dogs and forest solitude. Some of this color is still evident today and certain primitive customs, speech and traditions remain.

A few of the old water mills are still in operation, although most have given way to "progressive" methods of processing grain. Stone-burr corn meal may still be obtained at Dawt, Rockbridge, Hurley and elsewhere. Valuable nutrients of the grain that are refined away in more modern methods of preparation are retained in the grist from these old mills.

Not so many years ago deer and wild turkey were abundant over the entire basin of the White river. Deer have been increasing under careful management of the Conservation Commission, aided by the cooperation of the people, but the wild turkey have been hard pressed by burning of woodlands, over-grazing, encroachment of civilization and poaching. Of these factors, poaching seems to be the principal hazard that keeps the turkey population, now consisting of a few flocks in the more remote sections, down to a minimum.

It has often been said that no one has seen the real beauty of the Ozarks until he sees it from a john boat or canoe on a float down one of the region's rivers. On the White and its tributaries, there are localities where one may float all day and wind up within a half-mile or less of the starting point. The streams turn and bend over swift shoals or long, peaceful eddies, beneath rugged high bluffs, and along wide, gleaming gravel bars. With every turn in the river a different scene is presented and every sort of water condition susceptible to bass fishing is encountered—deep, whirling pools, silent water moving over giant boulders that are clearly visible, white swift water over the riffles, and quiet sloughs that are the preferred habitat of the largemouth bass.

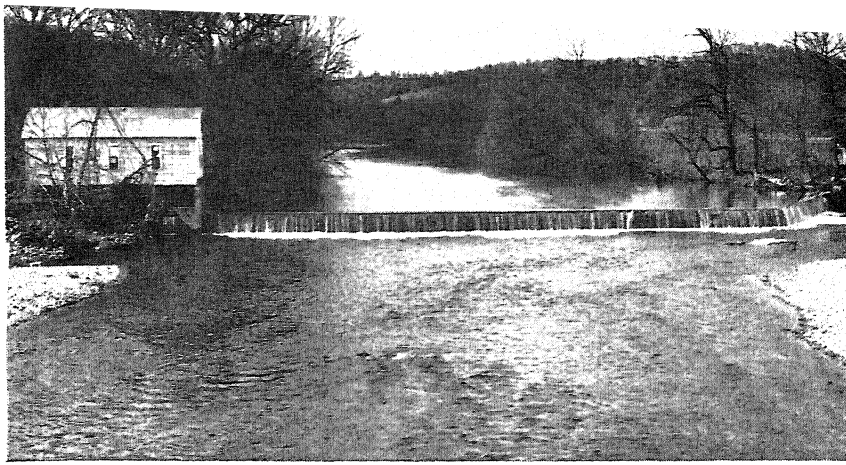
Although many methods of fishing the White river are employed—and some novel ways will be commented upon later—its widespread fame rests upon the traditional method of floating the stream in john boats and fishing for smallmouth bass. The smallmouth is a natural-born, clear-water fish, and such moving water brings out every bit of energy, speed, resourcefulness and other gamey qualities that have placed it in the foremost rank of game fish on this globe.

Float trips and the john boat have been growing in popularity for about 40 years. They seem to have originated at Galena, on the James. Floats from this point to Branson, a distance of 125 river miles, are still popular and require a minimum of five days.

The john boat is built for hard use, safety and maneuvering ease. It is 18 to 24 feet long, 4 feet wide, with square bow and stern and 12- to 14-inch sides. The boat is usually made to carry three persons—a guide and two fishermen. It draws very little water, glides over long, shallow riffles with ease and is managed with a paddle and a pole from the guide's seat at the stern. The boat is stable and may carry, in addition to passengers, complete camping equipment, including tents, cots, bedding, chairs, food and cooking utensils. If one of the many guide services is employed to furnish this equipment, all one needs to take along is fishing tackle, camera or other personal items.

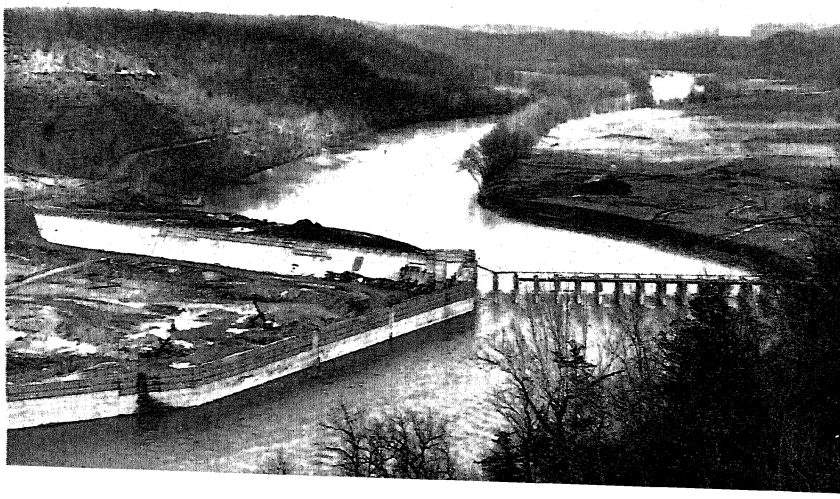
Float trips may be for one day or a week or more. The celebrated float from Branson, Mo., to Cotter, Ark., requires eight days when the river is at normal stage. The scenic grandeur of this "lower White" float has prompted a great deal of eulogy, including some that was good, while the black bass fishing has often been acclaimed as the best in America. This trip is 150 river-miles long, through rugged country where no bridges and very few farm houses may be seen. Only the occasional hum of an airplane may bring the realization that one is not traveling through a remote wilderness.

The most popular way of enticing a leaping strike from the bass is with a short bait-casting rod or a fly rod, manipulated from a floating john boat or canoe. However, many other devices are employed, including "still fishing" with minnows, "crawdads" or other live bait. One unusual method of the past, called "jumping," has been seriously doubted; it is humorously questioned



Old mill and mill dam on the Little North Fork at Theodosia, in Ozark county, Missouri. Bull Shoals dam, nearing completion at Cotter, Ark., will back the waters of White river up this tributary and inundate the area. Theodosia, a tiny hamlet on Highway 80, lies between Gainesville and Forsyth; the latter, Taney countyseat, will be partially drowned.

The picture below was taken in April, 1948, from a high bluff overlooking Bull Shoals, upstream from Cotter, Ark. Here huge drills are chiseling their way into 300-foot bluffs and great cranes labor behind the protection of a coffer dam. Bull Shoals dam is 264 feet high; it will back White river up for nearly 90 miles in Arkansas and Missouri.



by those skeptics acquainted with the old trick of catching snipes with an open sack on a dark night. But the actual taking of bass by "jumping" has been amply proved. It is a simple stunt. A boat with netting raised along the side opposite from the bank is rowed along slowly about eight feet from a weedy shore just after a rise that has made the water muddy. By probing the edge of the bank with a pole and a paddle, the bass are made to jump out of the water and toward the boat. They land in the boat or against the raised netting. Present regulations do not permit this method, but skeptics may confirm its effectiveness by inquiring of any experienced river guide. Under favorable water conditions it has been very destructive, since a great many bass have been taken in this way.

Other types of fishermen who are known by their methods—some of them unlawful—include "noodlers," who explore the crevices and caves underwater and catch fish with their hands; "juggers," who cast afloat jugs with baited hooks and lines attached; and "giggers," who use a spear on a long pole and concentrate on the many species of non-game fish, including cat, carp, red horse, suckers, buffalo and drum.

White river guides often say that bass have become educated by the multitudes of devices and lures used to entrap them. They are developing sales resistance to such antics as portrayed by the multitudes of lures and "sure-fire, never-miss" gadgets on the market today, say the boatmen. But in spite of this liberal education of its inhabitants the White remains the choice stream of many bass fishermen, and with the good roads of recent years, most of the water is accessible. Many other vacationers, of course, visit the region for other forms of recreation.

It is the opinion of Kenneth A. Reed, executive director of the Izaak Walton League of America, that the White river is the most productive stream in America for the smallmouth. Here are expressions from other well-known enthusiasts, who return again and again to float the White and its tributaries.

Thomas Hart Benton: "Even if we hadn't caught a fish, our trip would have been a success."

Robert Page Lincoln: "A letter . . . has asked that I pick the best smallmouth bass stream in America . . . so far as my knowledge goes. Probably in this respect I have as wide an acquaintance with such waters as the next fellow, having fished in most every state in the Union and in Canada. In the course of that time I have looked in on many smallmouth bass waters, being as I am one of those who would rather fish for smallmouths than any other fresh water fish. If I were to make a pick among the many . . . streams in the country I would, in the final, be forced to select the White river as the best of the lot."

Ray Bergman, Angling Editor of *Outdoor Life* magazine: "As I finish this chapter of Ozark fishing I am assailed by many memories. I see green rapids flecked with white foam and casting rods arched with the pull of fighting fish. I see bluffs of archaic beauty and friendly, clean gravel bars, cool at night, free of bugs, cheerful even on rainy days—camping places where there is neither sand in the food nor vermin to bother you. I see tents white in the dusk and ghostly in the night. I smell all the lovely smells of nature, the aroma of the river water, the dank odor of swamps, the pungent fragrance of the pawpaws, leading us on a foray to locate the source. I see ruddy campfires around which are gathered souls with kindred desires. I smell good coffee, French-fried potatoes and broiling bass. I see the mists of morning and the

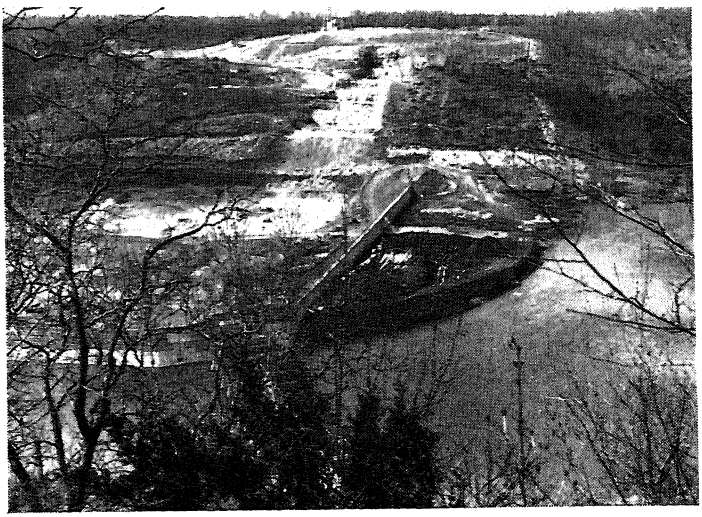
glowing embers of the fire from the night before welcoming me as I emerge from the tent to tackle the flapjacks and the bacon, to start another day, to float and fish again."

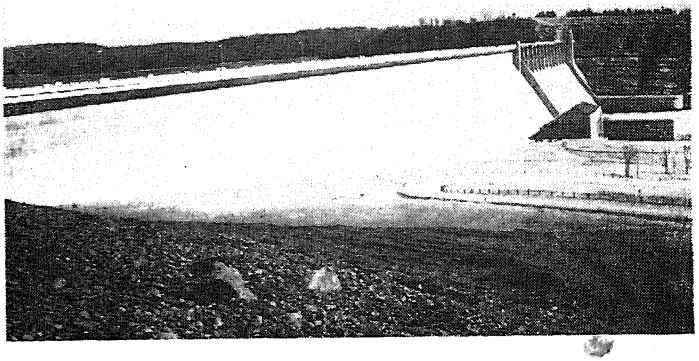
Lake Taneycomo (Taney Co., Mo.) is formed by a private power dam near Forsyth and impounds a 25-mile stretch of White river. Numerous resorts, tourist courts, and private developments are found on its shores. Lake Norfork, a much larger and more recent Federal development created by a dam at Norfork, Arkansas, extends 40 miles northward, reaching 10 miles into Missouri, to Tecumseh in Ozark county. This dam is built on a tributary, North Fork of the White river.

But these developments are only a beginning. Great and far-reaching changes in the river and its vast watershed are contemplated in the process of "complete development of the entire White River Basin." Present plans of the U. S. Army Engineers envisage the construction of 13 high dams in the White river country, three for flood control only, and 10 for flood control and hydroelectric power generation. Eight reservoirs created by dams already have been approved by Congress for construction by the U. S. Army Engineers on the White river and its tributaries, and actual construction awaits only appropriation of funds from the Federal treasury.

Of these 13 proposed and eight approved dams, the Norfork Reservoir is the only one completed. It was built during World War II, and finished except for minor installations, in June, 1944. The dam is 200 feet high; its length is 2,624 feet. The initial cost was more than $27,000,000. The elevation

Another view of Bull Shoals dam under construction. The dam will tie into the opposite bluff in the great gouge shown; it will fit a similar hill on the side of the river from which this picture was taken. Spring activity was just opening up when this shot was made, in March, 1948.





Norfork Dam in Arkansas impounds the waters of North Fork of the White river, backs Lake Norfork into Missouri. This dam is 244 feet high, 200 feet thick, 2,624 feet long.

of the lake surface varies between wide limits; the top of the flood control pool is 580 feet above mean sea level while the bottom of the power pool is 510 feet, a fluctuation of 70 feet.

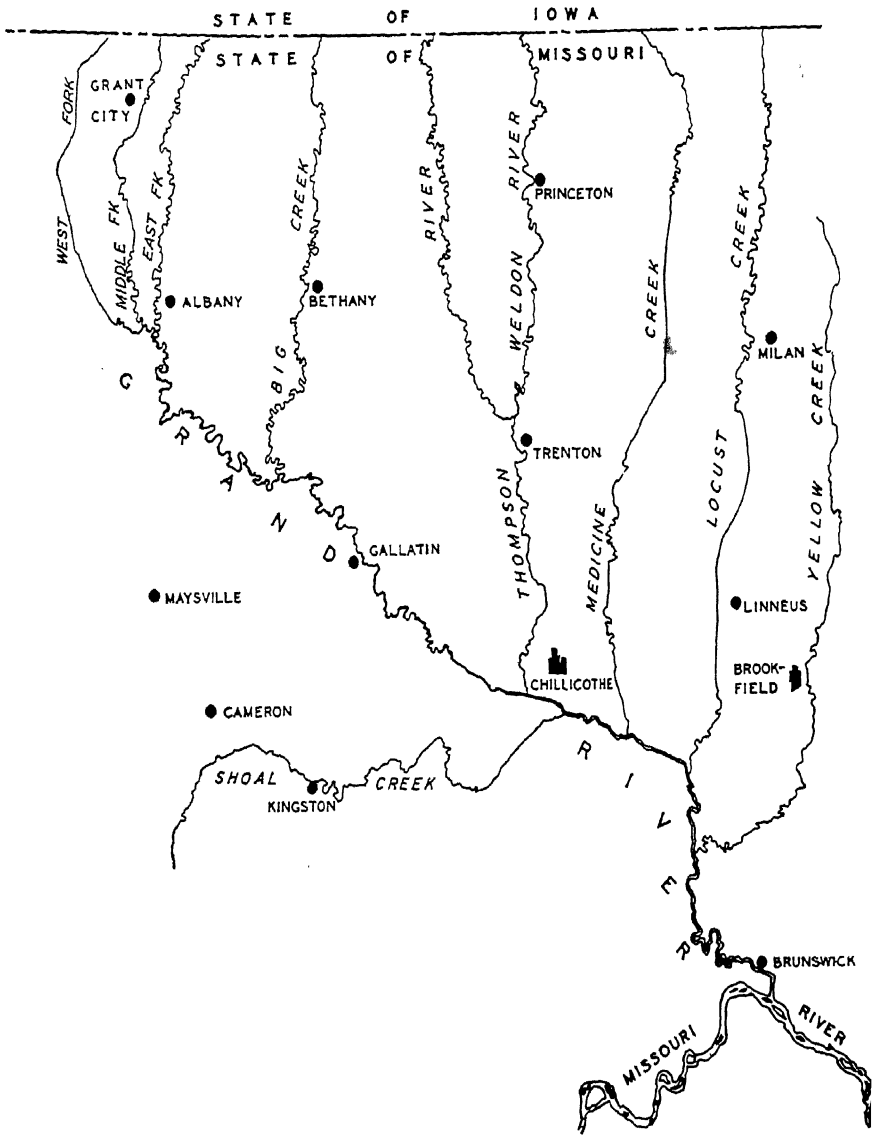
Bull Shoals dam, largest of the projects approved by Congress, is now under construction and the lake will be a reality soon. It will have nearly three times the storage capacity of the Norfork Reservoir, since at the top of the power pool it will cover 45,400 acres. The dam site is 17 miles upstream from Cotter, Arkansas, and it will back water up to the Forsyth dam in Taney county, Missouri, a river distance of 88.5 miles, while the shore line will be 1,050 miles long. In size, the dam will just about tie for fifth place when compared with other concrete dams in this country. The estimated cost of the project in 1945 was $47,000,000, but this figure has been revised—upward. The man-hours of labor required will be 43,000,000, and 8,500 carloads of cement are being used in the construction. The dam will be 264 feet high and 2,349 feet long.

When the plans of the U. S. Army Engineers are carried out, the White and its principal tributaries will have become a series of lakes with widely fluctuating water levels. There are many people in the region who seriously questioned the need of, or the benefits to be derived from, these enormous Federal expenditures. Much has been written and said in opposition to these huge dams. There are those who believe that the permanent flooding of the most productive bottom land of the entire region is economically destructive, and that the loss of natural beauty, esthetic and intangible values, is an even greater sacrifice. And there are some who favor the dams as an ecomonic opportunity in the recreational field.

From the viewpoint of economics alone, it is hard to say who is right in the matter of dams. But one fact is incontestable: when the development is

completed, when the plans are off the blueprints and have become reality, float fishing on a mountain stream will be a thing of the past as far as the White river and the lower James are concerned.

So let this be the swan song, the death chant, of a great stream that will becomes a series of man-made lakes. For when it is gone, it will have taken with it into oblivion something traditionally Ozarkian, something very dear to those of us who have known the White and James rivers.


STATE OF IOWA
STATE OF MISSOURI
GRANT CITY
WEST FORK
MIDDLE FK
EAST FK
ALBANY
BETHANY
BIG CREEK
GRAND
RIVER
PRINCETON
WELDON RIVER
CREEK
MILAN
LOCUST CREEK
YELLOW CREEK
TRENTON
THOMPSON
MEDICINE
GALLATIN
MAYSVILLE
LINNEUS
CHILLICOTHE
BROOK-FIELD
CAMERON
SHOAL CREEK
KINGSTON
RIVER
BRUNSWICK
MISSOURI RIVER

Le Riviere Grande du Nord

By Ray Wells

A long, sleek river boat ground to an abrupt stop at the forks of the river. The early morning mist was momentarily blown away to reveal a tall figure standing erect in the prow of the boat; around him was a motley crew of whites and Indians. It was 1724 and Monsieur de Bourgmont, the first white man to traverse this section of the new world, was appraising the wealth of this new-found tributary of the mighty Missouri. With the uncanny knack of all early French explorers for sharply assaying the value of any area in furs and resources, de Bourgmont was quick to note the untapped reservoir of otter and beaver that swarmed from one end of the Grand to the other. Upon his return to France he set down all his observations of *La Riviere Grande* and with its reading there began the European invasion of this virgin valley.

The first arrivals were only a few hardy French trappers who could stand the rigors of the rugged life, but by 1817 the harvest of fur resources was in full swing. Blondeau and Chouteau had built a trading post on the Grand river at Townsend's Ferry, just south of present-day Chillicothe, and were carrying on a thriving business with French and Indian trappers. Robidoux's agents from the trading post at Blacksnake Hills (St. Joseph) were traversing the valley methodically, trading for the pelts of various animals of the region.

The French trapper was kind to the land upon which he operated if not the wildlife. He was a child of nature, closely akin to the Indian in his habits, and totally disinterested in the richness of timber and soil in the Grand river basin. For 100 years he partook of the fur wealth of the area and, when he bowed out of the theatre, he left few scars to mark his sojourn in the country . . . the Grand flowed on, clear and cool, teeming with fish; the dense forest front was unbroken and in its protection game of every description still roved.

But as the center of population of these then-young United States continued to move westward, it was only natural that the Grand river valley would get its share of settlers. Here were found those game, fish and furs that were so vital in aiding the early settlers to get started in a new region. Here also were dense forests and—most important of all—rich soil for crops. By 1820 the ring of the homesteader's axe was becoming common. Homes sprang up; the forest began reluctantly to give way to crops.

The first white settler in the Grand river basin of which there is any record was one Martin Parmer, who built a cabin on Parmer's creek near present Brunswick. He was a typical frontiersman, uncouth and illiterate but with common sense and perfect integrity. In a speech delivered to the Missouri Legislature, of which he was a member, he declared: "I'm a ring-tailed painter [panther] from Fishin' river, wild and wooly and hard to curry. When I'm mad, I fight, and when I fight, I whip! I raise my children to fight. I feed 'em on painter's hearts fried in rattlesnake grease." He added that there were

three kinds of game he cared to expend ammunition on: "Deer, bar, and Injuns," indicating that other game was so common as to be of little interest.

Another early settler was Thomas Stanley, famed for his prowess as a hunter. His abode was a hollow sycamore on the banks of the river east of Carrollton and he spent the long winter evenings reading by the light of a sycamore splinter dipped in raccoon oil.

At this early date, the Grand river country was a hunter's paradise, with woods and prairies abounding in game. Buffalo, elk, deer, panther, bobcat, bear, turkey, prairie chicken and all the small game animals of today were present in great numbers. Buffalo were disappearing but elk still roamed in great herds. An early hunting practice was to round the elk up and drive them into timbered sections, where their horns became entangled in the branches and the hunters could go in and lasso as many animals as they wanted. It saved ammunition, too.

It was rare to find a settler who did not have at least six or eight saddles of elk or venison hanging in the smokehouse.

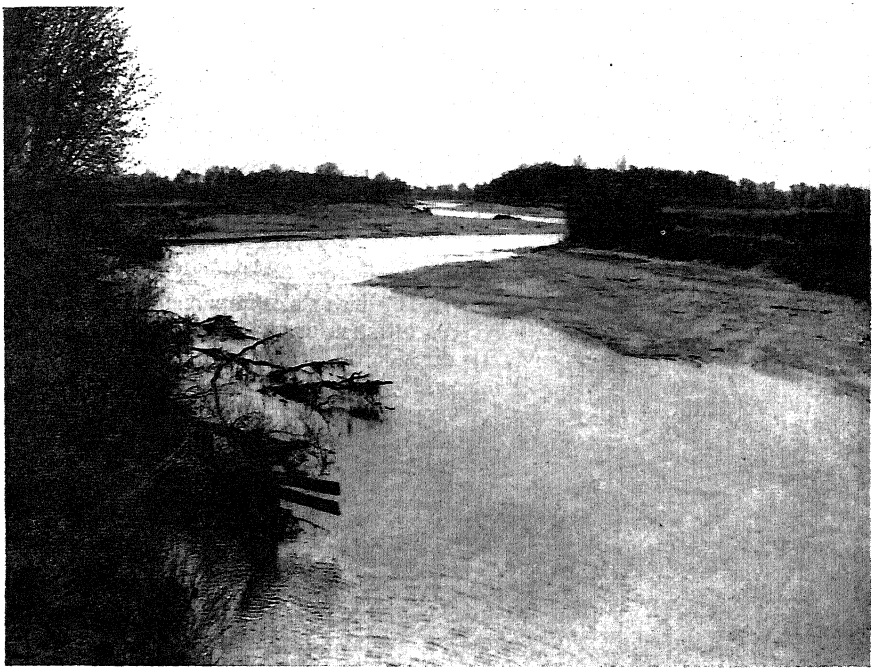
Jonas Casner related in 1818 that bear hunting was so good around Carrollton it was unusual for a hunter to take less than three a day. He told how a large panther followed his wife to the house and caught her by the dress as she rushed in the door. The dogs chased the animal and it was killed the next day. According to his figures it measured eleven feet from tip of nose to tip of tail.

Draining dense woods and blue-stem prairie, the Grand river was then a clear, cool stream abounding with fish. Early settlers told of catching crappie, bass, blue, yellow and channel catfish, perch, buffalo and drum—all in one day's fishing. The valley was a sportsman's paradise.

The seemingly inexhaustible supply of game and fish was too much for the early settlers from Kentucky, Virginia and other southern states. Adept at handling the long rifle and anxious to show their prowess, these master woodsmen killed ruthlessly and hunting orgies were all too common. "Squirrels by the bushel" and "turkey by the wagon box load" were common phrases. A shooting match held one Sunday by a corn crib, in a field surrounded by timber, was halted by darkness after one side had killed 276 squirrels to the opposition's measly 182.

These hunting practices, coupled with the steady and ominous removal of timber and cover, began to take their toll. By 1836 the elk had disappeared; the last bear was seen around 1840. This decline of game was apparent to the settler but he was reluctant to admit the real cause. Many were the theories advanced for disappearance of the game: one oldtime Democrat said that the Whigs scared the deer, bear, elk and other game out of the country in 1840 by their yelling, anvil firing and torchlight parades in honor of General Benjamin Harrison. The valley was no longer a hunter's Garden of Eden.

Almost coincidental with the decline of the game and undoubtedly caused by some of the same factors, came a new threat—floods! The river had been subject to heavy run-off at regular periods during the spring rains, but in 1844 it spilled over its banks and ravaged a great portion of the bottomlands. It was the worst flood the settlers had seen, but it was only an ominous preview of what was to come. Each succeeding flood seemed to grow in intensity. The



This was once a clear, cool stream flowing through forested banks from the Iowa line to the big Missouri. Now the timber is gone; floods devastate the Grand river valley and leave behind them a shallow, silt-choked bed. Note well the cut banks, the silt that came off some of the richest farms in the world. Things have changed since the first Frenchmen stood here.

water was pouring off the hills and plowed fields, concentrating in a rapid run-off that roiled and muddied the river and ruined crops and lands in the fertile valleys.

The Grand river, draining 7,900 square miles, is second in watershed size only to the Osage. Some 4,956,000 acres are drained by this monarch of north Missouri. Very little of the original stand of timber that once flanked the river is now evident. Instead one sees cornfields, pastures and other crop lands. The rain that falls meets little opposition now in its mad rush downhill to the muddy Grand.

In a study of the watershed of the river, it will be noted that the stream rises in southern Iowa and flows south and east to join the Missouri river near Brunswick. In its journey it gathers up the water from various tributaries. The East, West and Middle Forks join to form the main flow, before Big, Grindstone, Shoal, Medicine, Locust and Yellow creeks and Thompson river dump their loads of water and silt into the parent stream. As the Grand reaches the broad Missouri plain it becomes sluggish, shallow and wide, with white sandbars exposed like the clean-picked bones of some forgotten monster of the past.

The elliptical shape of the basin and the fan-like arrangement of the tributaries create an ideal situation for rapid concentration of run-off. As a result

of the flood of 1915, one of the worst up to that time, an attempt was made to alleviate the condition by straightening the river. A goodly portion of the stream above the forks was straightened in hope that this would increase the carrying capacity by hastening the run-off in the stream bed.

The project was doomed to dismal failure. Instead of aiding the situation, it only made matters worse, and succeeding floods increased in intensity until nearly 350,000 fertile acres were scoured or silt-laden after each flood. In Livingston county, 40 per cent of all land is now subject to the whims of the river.

That matters were made worse by channel-straightening is borne out by the U. S. Army Engineers *Report for 1932*, which states in part: "There is a strong indication that the sediment concentration on the two main forks of the Grand river is considerably greater than at downstream points on the main river. The apparent explanation is that the river is in a state of unstable equilibrium due to extensive straightening of the river channels of the Grand and Thompson rivers, which has been carried out for flood protection. Apparently, the straightening of the river has intensified its scouring action in the new channels and has resulted in considerable deposition of silt in the unimproved lower reaches of the river, thus reducing the natural channel area available for discharge of water."

This annual load of silt carried by the river is equivalent to 7,500 acres of soil one foot deep, and is the cream of the crop land in the watershed area.

Prior to the filling in of the lower reaches of the river by such vast quantities of silt, the churn of river boat paddles was rather common. Brunswick enjoyed a number of years as a busy port city and, from 1848 to 1859, steamboats made regular runs up-river to Bedford, 60 miles above the mouth, and occasionally to Utica, 20 miles higher. In 1842, the stern wheeler *Bedford* ascended to the forks below Chillicothe, bringing up merchandise for Chillicothe dealers from Brunswick and St. Louis. On its second trip it struck a log and went to pieces near the present town of Bedford.

In 1849 the *Lake of the Woods* came up to the forks and put off freight. It spent approximately a week tied up to the landing and dances were held each night on its decks that attracted beaux and belles from Chillicothe, Utica and Bedford. At the end of the week, the boat was laden with wheat by Asa T. Kirtkely, William Mead and James Campbell, who shipped the grain to St. Louis, where it brought fifty cents a bushel.

Due to changes in the river, navigation ceased by 1870; however, the river was used for the rafting of logs until around 1890. Today it is difficult to travel very far in a light rowboat without getting out to drag over a shallow stretch. A tremendous change in less than a century.

The frequency and severity of floods increased as a result of stream straightening and a cycle of wet years, so a demand arose for flood prevention work by the government. As a result, the Army Engineers began a continuing survey of the basin to determine what could be done. An outgrowth of this survey was the recommendation of three sites for huge reservoirs that would be constructed to hold back a large volume of water during flood time and then drawn down to a low level during dry periods. The recommended locations of dams were at Chillicothe, Pattonsburg and south of Trenton, though the large projected reservoir at Chillicothe was later taken from the recommendation. The exact status of these dams is unknown; they had not progressed much beyond the blueprint stage in July, 1949.

Flood in the valley! The Thompson river, a tributary of the Grand, goes on a rampage.

Other government agencies became interested in the problem of flood control on the Grand. Far-seeing agricultural men began to ask if it would not be wise to slow down the run-off from the land and to store water in ponds and small reservoirs. The CCC and the Soil Erosion Service began encouraging and aiding in the construction of soil and water-saving terraces, contour lines and ponds as part of their work in Harrison county. In the middle thirties the Soil Conservation Service set up one of four state demonstration projects on the Big creek watershed, a tributary of the Grand river. Here intensive work was started with the ultimate goal of holding as much water as possible on the land. Every effort was made to encourage individual landholders to make soil saving practices a part of regular farming routine. This demonstration project was set up for all of Big creek watershed, including its East and West forks. About half of the activity was carried on in Iowa and half in Missouri.

As the work progressed, more and more plans of water management were made for farms in the East Fork basin. Today, if you happen to be in the neighborhood of Bethany, where the two forks of Big creek join, and should inquire of some local persons as to the result of the work on the watershed of East fork of Big creek, you are likely to receive an answer like this: "Well, it's strange, but before any of that work was done, you could count on the East fork going on a rampage after any rain. West fork came out and flooded the bottoms, too, but it took a little longer and a little more rain. Now the situation is reversed. That East fork is as mild as a lamb compared to the tributary to the west."

"What is the status of the game and fish today in the Grand river basin?" This is a fair question, and one not too difficult to answer from hunters' reports and other records kept by the Conservation Commission. Of course, big game disappeared soon after the coming of the settlers. However, today there are several herds of deer that seem to be increasing and a few deer are present in each county of the watershed area. Interest in building up the herds is evident. In 1890, deer were practically extinct in this area. Today they are decidedly coming back.

The hard winters of the middle thirties nearly decimated the quail population in this section. Today the quail have made an amazing comeback. Hunters' records from all over the state indicate that the Grand river area leads the state in quail-bag success. Records indicate the same thing to be true in hunting success on rabbits—a startling factor, when you consider that quail, rabbits and other ground birds and animals are completely at the mercy of the Grand and its tributaries. It is a rare spring when the waters do not spill over the banks to ravage and destroy crops and wildlife.

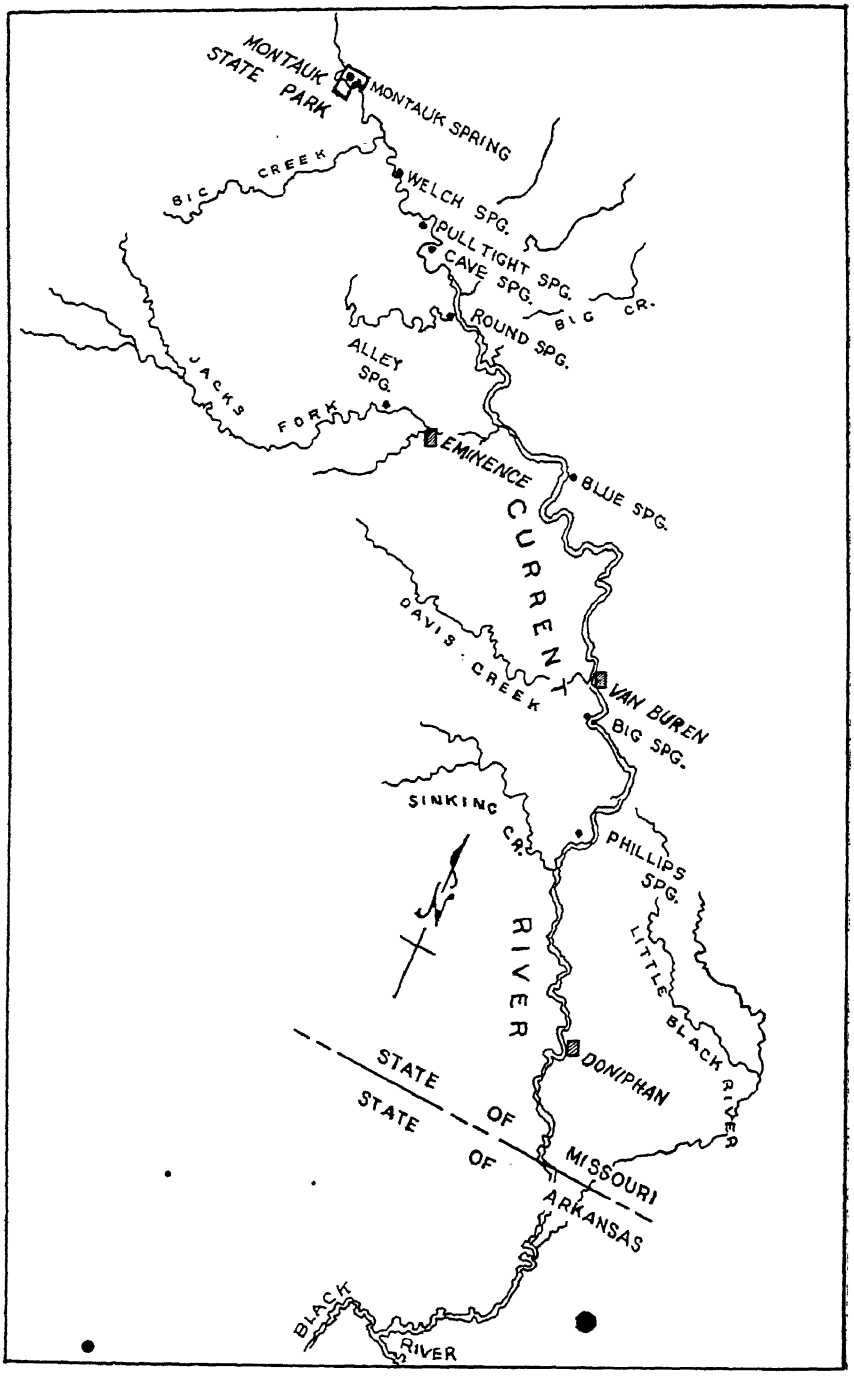
In the river, there are but few crappie in the cut-offs and the bass are rarely found. The only game fish left, in profusion, is the channel catfish—but it grows large enough to call for deepsea tackle!

With the flood damage from 1909-1930 totaling $17,045,000 and today running better than a million dollars a year, it is not strange that the dwellers of the basin are looking for a ray of hope, a promise of cessation of the annual destruction. As this article is written, perhaps that ray of hope is in the offing. Recent news releases indicate that the U. S. Army Engineers, Soil Conservation Service, Reclamation Service, Extension Service, College of Agriculture and

Rolling pastureland now forms half of the Grand river basin and is helping solve the problem of soil erosion and stream siltation. This is the best quail-hunting range in Missouri.

various other interested State and Federal Agencies are preparing to embark on an extensive survey of the turbulent Grand. That survey will have as its goal the ways and means of taming the river. It will be a broad program, an innovation in surveys of this type, with all agencies working in harmony toward a common goal. Reservoirs, contouring, terracing and all practices to slow down the run-off from the land might well be a part of this venture. At least it is a faint ray of hope that has been so eagerly sought and so elusive all these years since the early settlers despoiled *Le Riviere Grande* of the early French.

Who knows? The Grand river basin might again blossom as the garden spot and wildlife haven that it was intended to be—and still produce good crops and good people.


MONTAUK STATE PARK
MONTAUK SPRING
BIG CREEK
WELCH SPG.
PULLTIGHT SPG.
CAVE SPG.
BIG CR.
ROUND SPG.
ALLEY SPG.
JACKS FORK
EMINENCE
BLUE SPG.
CURRENT
DAVIS CREEK
VAN BUREN
BIG SPG.
SINKING CR.
PHILLIPS SPG.
LITTLE BLACK RIVER
RIVER
DONIPHAN
STATE OF MISSOURI
STATE OF ARKANSAS
BLACK RIVER

The Current - Daughter of Springs

By Edgar Allen

In Dent county of the Central Ozark region, a small spring rises—a spring that is small only in comparison with the giant flows found elsewhere in the region. And in Montauk spring is born from the womb of earth the fabled, romantic Current river—a birth that is a portent. For the stream is nursed to adulthood by other, greater outbursts from the earth as it moves southeasterly through the very heart of the Ozark region of Missouri. And at Doniphan, most southerly of the two towns on its banks, 62 per cent of its total waterflow has come directly from springs.

The Current river region is sparsely inhabited. In all its 90 Missouri miles, the stream touches only two small towns: Van Buren, county seat of Carter county, and Doniphan, capital of Ripley county. The river has been a road and food source for its people, nonetheless; before the white man, it furnished the Indians with water, fish, fur and transportation. It still serves in this capacity today, though less literally than a century ago.

Scratch the history of almost any Missouri river and you find a Frenchman—it is true of the Current, although the first *voyageur* is unknown. The name is a corruption of the original French title, *Courant*, which means flowing water—in fact, just about what the Anglo-Saxon name implies.

The principal tributaries of Current river are the Jack's Fork river, numerous small springs and three huge ones: Welch, Blue, and Big. The stream flows through a drainage basin that is narrow; only about six miles wide at its beginning, it spreads to around 50 miles in the middle and narrows to about 25 miles in width down near the Arkansas state line. In the upper reaches, the land is a series of tortured hills but these become rolling terrain before the stream's juncture with the Black river, below the state line, not far from where both pour their waters into the White river.

The water flows rapidly, to justify its name; it drops 91 feet from the spot where Highway 19 crosses it, near Round Spring, to the mouth of the Jack's Fork; the fall is 123 feet between the Jack's Fork and Van Buren and 125 feet between Van Buren and Doniphan. It figures out to a fall of more than four feet to the mile—rapid descent by any mode of figuring, for a river. The rate of flow is more uniform than in any other large river of the state, due to the reasonably steady feeding from springs, and the water is always clear and cold. Most prominent of these feeder springs are Montauk, Welch, Pulltight, Round, Blue and Big on the river proper, plus lovely Alley Spring on the Jack's Fork. The tributary streams shown on the map are largely intermittent creeks.

Floods come to the Current only after unusually heavy rains. The waters spread out over the bottom lands then, but a flood is usually of brief duration, largely because of the rapid run-off to the south through steep, rocky banks.

When the first settlers reached this area, the hills were covered with stately pines. Beneath them bloomed the redbud and the snowy dogwood; along the river banks gleamed the showy cardinal flower and the Indian paintbrush. Bluestem grass covered the slopes and formed an important food element for ruminants of the region. This was savage, primitive—and beautiful—hill land.

It would be incorrect to blame early settlers for destroying the fine timber they found—but the practiced eye of lumbering company representatives soon estimated the commercial value of the pine. Big timber outfits moved into the area in the late nineteenth century; hill by hill, valley by valley the axes mowed down giant conifiers. Down the hillsides into the river skidded the logs, to be lashed into long rafts and drifted to the mills. Year after year, the great saws demanded more and more trees; cutting became less and less selective until, in the end, only denuded slopes were left. And then the mills moved on. Many of the employees, now without work, remained in the Current river country.

With the pines gone, oaks began to crowd over the hills but fires became frequent and the flames bared already thin soil to the rains. Gravel washed down into the smaller creeks and into the Current itself, until now it is much more shallow than it was and navigable only in small boats. The terrain is heavily-timbered again, but the trees now are oaks, in the main. Yet, for all this rough treatment, there are few more pleasant regions on earth than the country along the Current river.

It is, perhaps, a little erroneous to say there are only two towns on the river; Eminence, the Shannon county seat, lies in the watershed on Jack's Fork and is the starting point for many of the float trips made on the Current and this major tributary. To the southeast of here lies Van Buren and the cross-river settlement of Chicopee, railhead for the Carter county seat. The train makes a trip every two days and its chief carloading is lumber. When the people of Van Buren go places—and they do go places—their travel is by automobile.

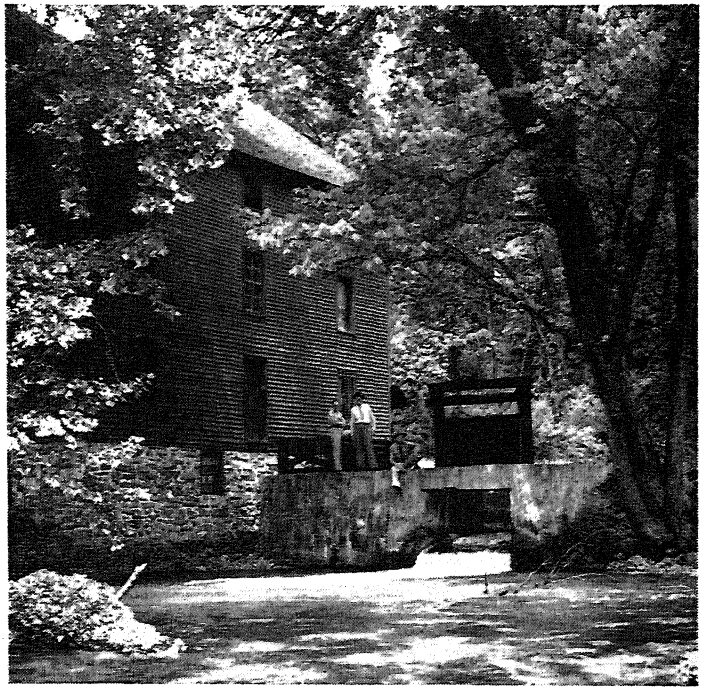
The population of Eminence is 1940 was 417; that of Van Buren was 458. Such figures give no idea of the charm of these small towns, both probably larger today than they were then and both wellknown to far-venturing fishermen.

Forty river miles below Van Buren is Doniphan, largest of the Current's towns, with nearly 2,000 population, and possessor of a large trade territory. Doniphan is less concerned with recreation than the other two towns, though it is the terminus of many a float trip and a city of sportsmen.

The Current river country has always been a recreational area and is developing along that line more and more. What might one expect to do or see in a visit to the region?

At the very headwaters of the river is Montauk State Park, one of the fine Missouri parks where the Conservation Commission has a trout hatchery and where the rainbows are stocked for anglers. The park lies in a narrow valley between rugged, timbered hills and contains cabins and a small hotel. Its accommodations are generally crowded on weekends during the trout season. Montauk lies south of Highway 32, between Salem and Licking.

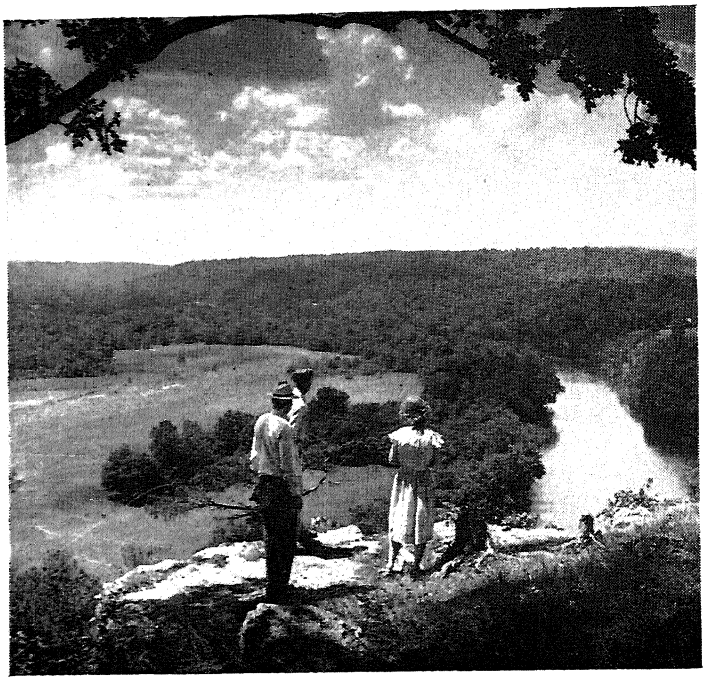
Moving down river, a floater hits Welch spring as the first big water sup-



The old mill and run at Alley Spring State Park, on the Jack's Fork, a tributary of Current river.

ply. The spring gushes from a cave at the base of a high, wooded hill and flows about 400 feet into the river. Further down, one reaches Round spring, which rises in a small state park. The water lies in a circular basin about 60 feet in diameter and 25 feet in depth, without visible sign of movement; it escapes from the basin through an underground passage, emerges at the foot of a bluff and flows 800 feet to the river.

Still further down is Blue spring, below Powder Mill ferry, which is rated as perhaps the most beautiful spring in the United States. It has, of course, a legend; the chief of an Indian tribe living in this area had a beautiful daughter who was much desired by all the braves but who would not listen to their love songs. The chief became convinced that he needed a son-in-law and decided to hold a contest of strength with his daughter as the prize. The braves gathered to demonstrate their skills in running, wrestling and archery; a stalwart warrior was declared the winner but the princess could not be found. After a long search, she was discovered hiding from matrimony in a cave above the spring.



This scene is on the Current near Van Buren, before Big Spring sends its clear tide into the river.

The chief's patience was worn thin. He ordered the cave blocked up and the girl left there. The loneliness seems to have been all right, but the maiden missed the blue sky and prayed to the Great Spirit to open a cleft so she might see it. The opening appeared, but in the side of the cave; then the Great Spirit, to compensate for this lack of a heavenly view, turned the waters of the spring below the cave into the deep blue of the Ozark sky. The Indians, properly impressed, then named the water, "Spring of the Summer Sky." The princess is still in the cave, legend says, and the water most certainly is still blue.

And after this the floater comes to the king of them all: Big Spring, four miles southeast of Van Buren, in Big Spring State Park.

Only by a visit to the site can one realize the immensity of Nature's work here, where a river bursts from its subterranean passage beneath a sheer cliff and rushes down to swell the Current. The park itself is of extraordinary beauty, with its rugged hills, heavy timber and deep valleys. There are many deer in it.

The Current contests the claim of White river to being the finest small-mouth bass stream in the world. This author's favorite float is from Powder Mill Ferry to Van Buren, a stretch of water with plenty of swirling rapids, interspersed with deep, slow pools for casting. Good camp sites, complete with pure, cold springs, are available all along the river. There are fresh vistas

around every bend; not infrequently, a deer is browsing along the bank and one is likely to hear a squirrel chittering from an overhanging tree at these strange creatures drifting down the river in a john boat.

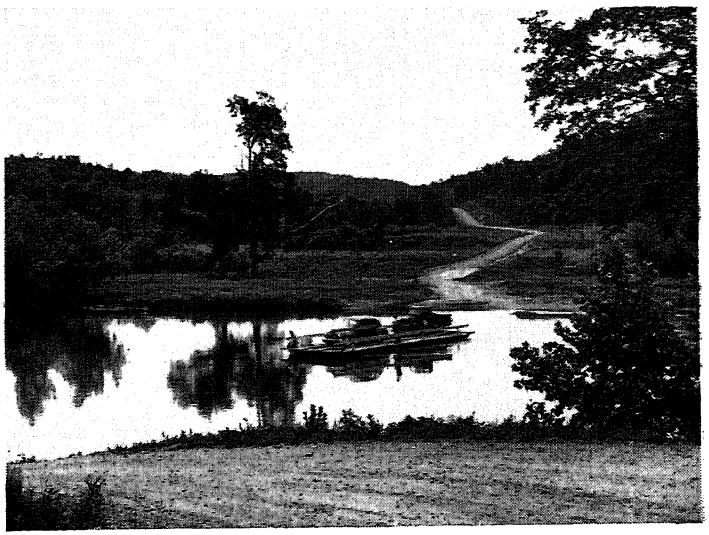
In all this Current river country there is game. Van Buren is the center of the deer-hunting region during the fall season and heavy kills are recorded here. And just to the west of the river's lower stretch lies the Irish Wilderness, a half-fabulous area where few people live, where the roads are mostly forest trails. From the Wilderness still come tales of panthers and bears—though none have been verified—and the rugged terrain is unsafe for tenderfeet who do not know the country. It is easy to get lost here, and it could be fatal.

The Hibernian portion of the area's title came from an abortive attempt to colonize the region before the Civil War with Irish laborers who had been working on a railroad and were left stranded. The attempt wasn't very successful. During the war between the states, these "foreigners" were bushwhacked and robbed so frequently that they moved out, but left that trace of their nationality. There are few other Celtic traces, now.

There is also a legend that Jesse James once hid out in a cave just east of Van Buren, along the river. Caves are plentiful in this region.

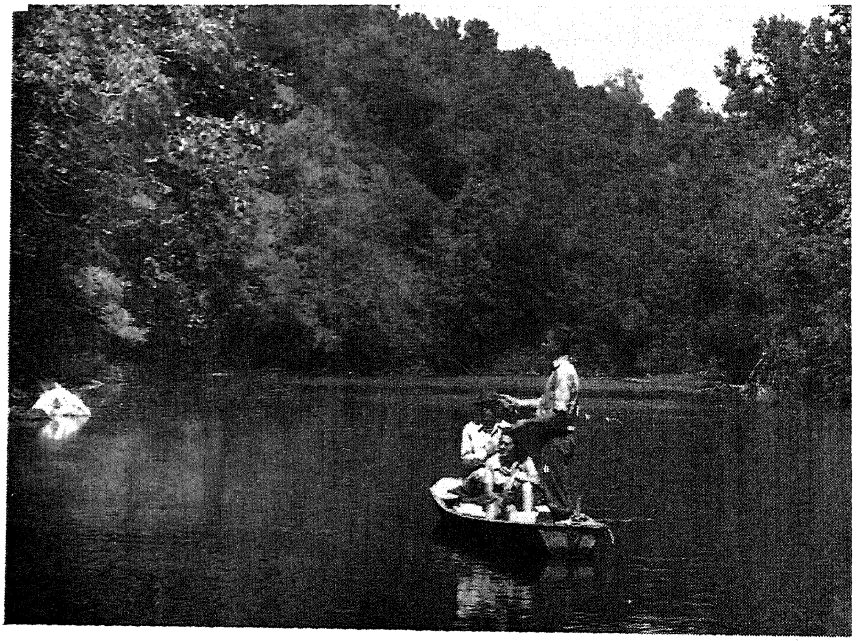
But if Current river is to continue as a great recreational area, man must change his attitude and activities. He must rebuild, as nearly as possible, the conditions that existed when the European first came into the region. Can it be done?

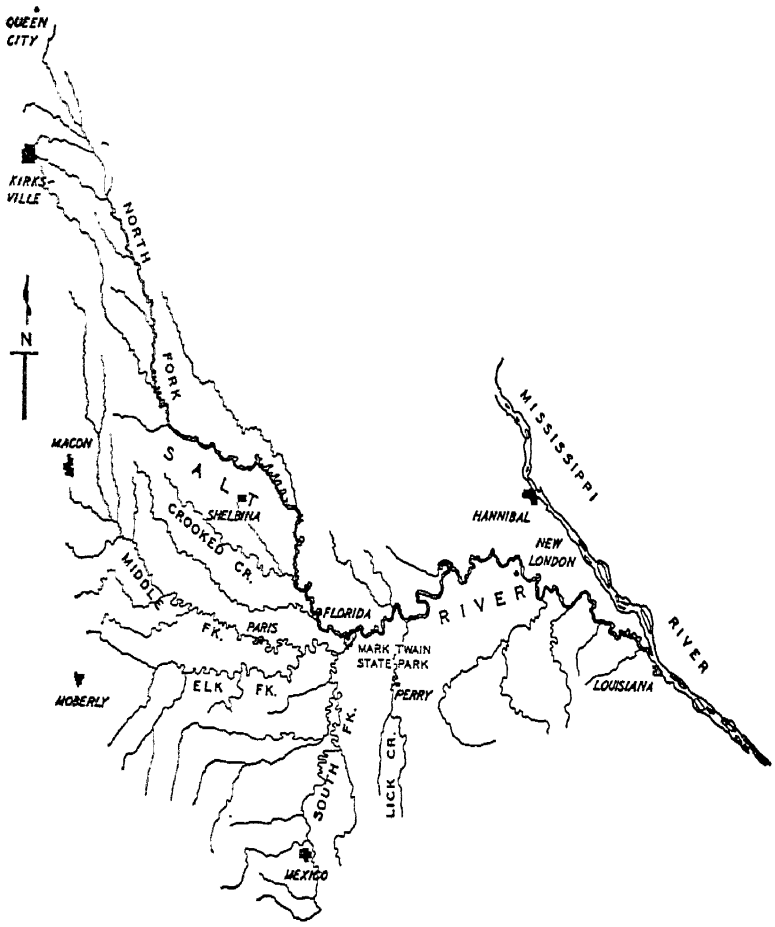
Powder Mill ferry is operated by stream power: the force of the current drives the ferry across the river. The road is State Highway 106, linking Eminence and Ellington. Powder Mill is also called Owl Bend.



It can. In fact, it is being done. The National Forest Service and the Missouri Conservation Commission, working both separately and together, have realized the need for watershed improvement. They have taken thousands of acres of hills and valleys into a program of fire control and reforestation. They have practiced selective cutting to develop the more important species of trees, controlled grazing and brought back the watersheds where possible.

Sometime, if you are visiting this region, climb one of the fire detection towers and take a look—you will see one of the greatest panoramas ever spread before man. There, rising and falling with the hills in the blue haze of Ozark distances, are the deep green of pines and the lighter green of hardwoods. And winding through it, a silver thread in an emerald landscape, is Current river, that lovely daughter of the giant springs.

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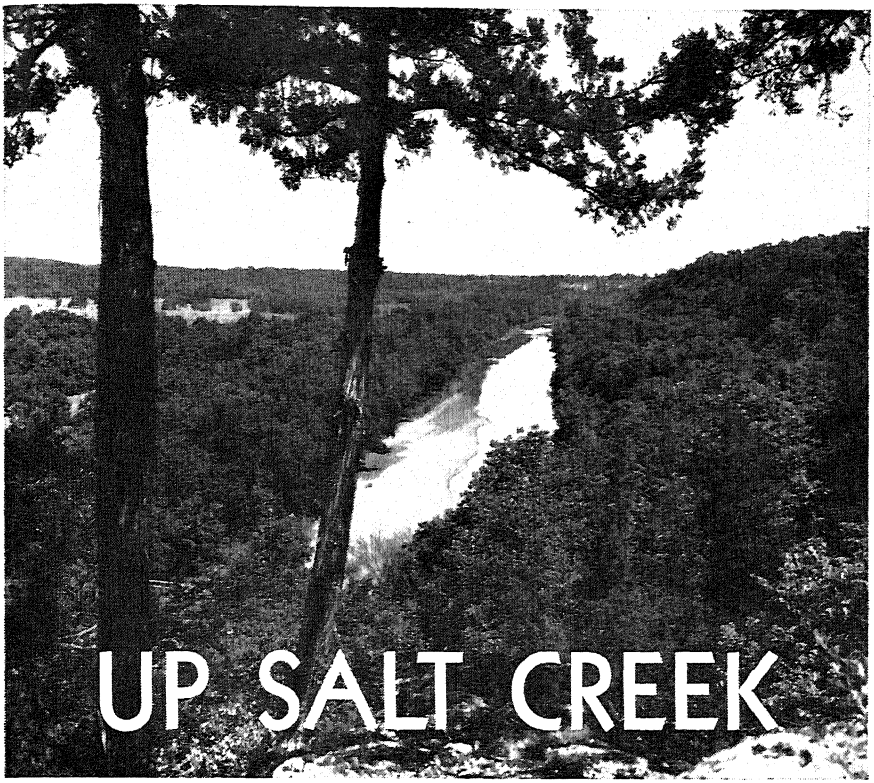


A Report on The Salt River

By W. O. Nagel

The story of a river is the story of its people. Through their lives flows its current and the character of the stream reflects the attitude of the people toward the river—the land of its watershed, and the life in its pools.

There is no mystery in this relationship. Plainly written on the earth's surface are the signs that, when men move into new country, they congregate first along the rivers. Here, as they develop their social and economic pattern, its threads are guided by the nature of the stream and the land it drains, and this pattern in turn affects the rivers according to the way the stream and its watershed are used. It is a give and take relationship on both sides.

All rivers are different. It is truth to say there is no other river, anywhere, just like the Salt. It is equally true that there are no people, anywhere, just like the Salt river people. Because this difference is due, at least in part, to the influence of one upon the other, the story of either is the story of both and it makes no difference whether you start the story with the river or the people; it will wind up being the same story, after all.

Twenty-six years ago, in the Munsey Basin wilderness of western Colorado, I came across a small cabin set in the shadow of Ragged Mountain. Its lonely occupant made me welcome, and asked the inevitable question:

"Where you from?"
"Missouri."

He nodded, as at something familiar.
"Pike county?"
"No—Audrain."

"Never heard of it," he said. And, though I spoke with injured pride about fine saddle-horses, wide prairies, and good coon-dogs, nothing registered until Salt river was mentioned. "I've heard of that," he admitted.

Now, looking back at this episode, there is nothing unreasonable about the fact that, to this western hermit, Missouri meant Pike county and the Salt river. To the whole broad West, from its very beginning, Pike and the Salt mean a region and a type of people. And this is due to two peculiar facts of history.

The people who first laid out Pike county did so with a broad hand. As originally conceived, its east boundary was the Mississippi; on the south lay Montgomery and Lincoln; Iowa bounded the north—and to the west it stretched across plains and mountains to the Pacific! The first emigrants westward were men from Pike, and they let everyone know it. Their distinct personalities and fierce pride of origin made a vivid and lasting impression on everyone who met them. Pike county and its "ring-tailed roarers" became a legend remembered today.

The Salt river itself owes its wide-spread fame to a fruity, catchy phrase. "Gone up Salt river," or simply "Up Salt creek" became a pithy expression meaning anything from the defeat of a political candidate to a variety of situations either embarrassing or deadly. There are several versions of how the phrase originated, but all center the location on Missouri's own Salt. Probably the Pike Countians had a hand in it.

But Pike county and the river are not all of the region's claim to fame. Few watersheds of similar size have contributed so many great and near-great sons, daughters and institutions to the nation's roster. Lieutenant Zebulon Pike; General Omar Bradley; Mark Twain; Mary Margaret McBride; Rex McDonald, king of the Morgan breed; Joe Bowers, of folk song fame; Jack Blanton, dean of country editors; Champ Clark, that old political lion; sorghum beer; the first Osteopathic college; the fine art of fish-noodling—these but touch the highlights of a region where a people and a way of life brought forth a rich and varied harvest, in which a long and shining river played a part.

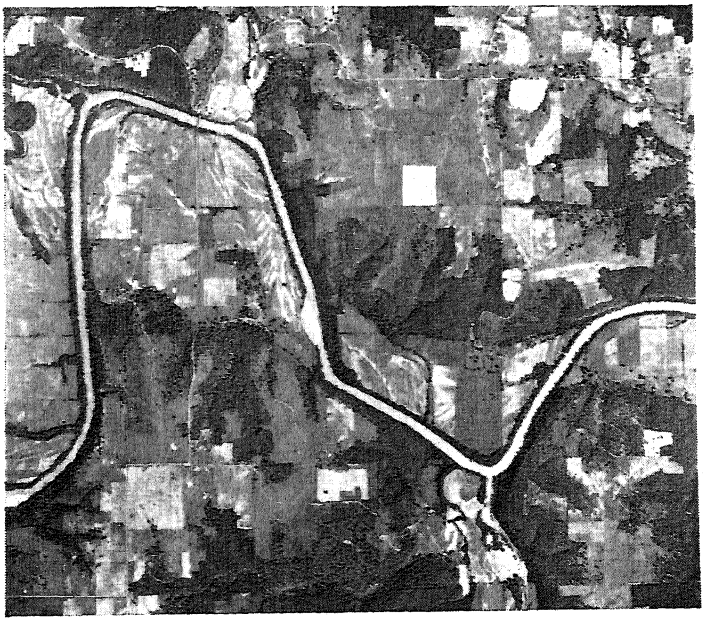
Looking at the stream itself, we see it drains a basin of 2,900 square miles, including all or parts of 12 counties. From its mouth in the Mississippi above Louisiana, it winds through smoothly-rolling hills that break sharply at water's-edge into steep, cedar-lined bluffs, up to the high, flat home of the upland plover, thrusting grass-bordered fingers into every major prairie from Queen City south to Auxvasse.

In character the Salt river is somewhere between the spring streams of the Ozarks and the straightened, mud-banked channels of the northwest. No

brawling mill-race like its southern cousins, nor dredged to become a silt-sewer, the Salt remains for the most part a placid stream. In winter it hibernates underneath a sheath of ice; in summer it coils slow-moving over alternate beds of mud and gravel. It can, and does, flood. But even when it surges out to cover bottomlands, the damage is neither as great nor as long-lasting as on either the hill-born streams or the "improved" channels. In the wide flats of the lower reaches, farmers expect to lose no more than one crop out of five. And when high water recedes, they expect to find silt, rather than sterile rubble, left behind. The Salt has slipped only part-way down the Tobacco Road of most of Missouri's waterways.

There are several reasons why the river is still pretty much of a stream. Remembering that it is people and their activities that decide the fate of a river, we have to look at the history of settlement to explain the Salt as it is now. The first pioneers came to make salt from the many saline springs and licks that gave the river its name. Dig through the silt of years to the bottom of any Missouri stream-channel and you'll find a Frenchman's bones. So on the Salt river, the first recorded commercial salt enterprise was started by Maturin Bouvet in 1792, near Spaulding. He was followed by Kentucky-born Samuel Gilbert, who located at Saverton in 1807. These activities had no effect on the river, for the men were interested neither in farming nor in cutting timber.

An aerial view. The tributary in the lower right is Lick creek; the bridge at upper left is Joanna. Note the fringe of trees left bordering Salt river. A small salt lake, appearing white in the picture, may be seen in the border of a grove just left of Lick creek.



Bouvet didn't last long; Indians destroyed his fort and the survivors went back to St. Louis. So did Gilbert, but he soon returned. There really wasn't much Indian trouble; mostly they appeared to resent being crowded away from their traditional sources of salt. The settlers who took up land in the early 1800's had little difficulty living a happy, prosperous life until the War of 1812 set the Indians off. They were beaten in a decisive battle at the site of Cincinnati; on leaving the region forever, they painted scenes on the nearby bluffs that still tell a story of exodus.

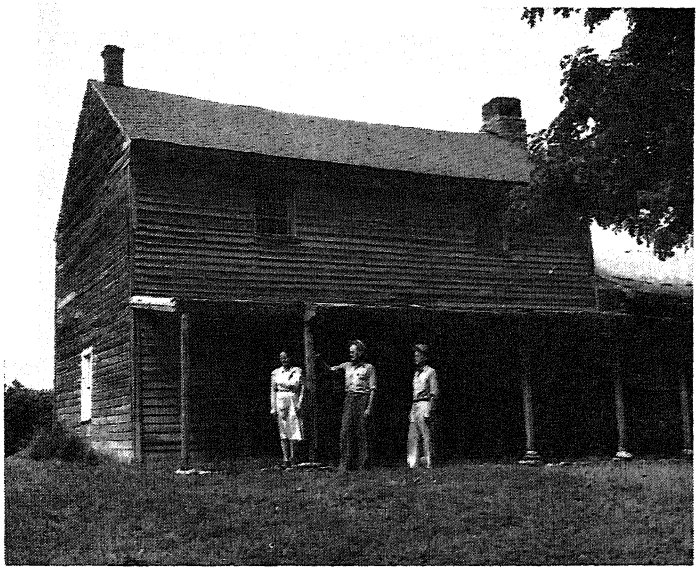
Early accounts are remarkably free of the usual tales of hardships. The land was rich with fertile soil, great timber, fur, fish and game. There were hunters and trappers, of course, but in general this was a land-owning community from the first, interested in order and politics and progress. Initiative showed itself in varied ways, from the fortune-hunter who created a new and potent drink compounded of one part whiskey to seven parts of Salt river water, to the citizens who formed a navigation company to serve the Salt from Florida (the town) to the mouth. The Legislature backed the plan and, on the strength of it, Cincinnati Landing was established in Ralls county, not far from Joanna and a dam site now blueprinted by the Army Engineers. The navigation plan failed, when a railroad boom in 1837 assured settlers of the needed transportation. All that remains of Cincinnati Landing is the hotel, built of black walnut logs, which once sheltered General Grant.

The watershed had developed beyond the pioneer stage by 1839; after that few people moved out but many came in. All but the most restless spirits stayed. Perhaps it was this thought of permanence that caused people to use the land conservatively, in contrast to the often-repeated story of "get in, tear up and get out" in other areas. Perhaps it was the origin of the settlers.

The ancestry of the original settlers was mostly English, by way of Kentucky, the Carolinas, Virginia and Tennessee. That is a clue to the individuality of the people; they have the flavor you could expect from a community of English origin overlain with traditions of life in the old South and enriched by cultures of other nationalities, the whole blended into mellowness by the influence of a region that combined newness of a frontier with attributes of Old England. There is a story of the British World War II bride, who said of the Salt river country: "I'm going to be very happy here. It's so much like home."

Another aspect of the people that helps explain the river was their way of life. There was little desperate grubbing of every acre to make a living; farms were large, only the most easily-cultivated fields were tilled. Great areas of grass were left for livestock; large expanses of woodland were left uncut and none—except by accident—was burned. True, the first fields were cut out of the white-oak flats or the mixed hardwood bottoms, because this was easier than to break up the deep-rooted prairie sod, but agriculture conquered the prairies long before it was necessary to turn to the steeper timbered slopes.

So for many years there was little erosion, little increase in run-off. The river scarcely changed until, because of events in history and mechanics, the way of life of its people changed. At first this change was gradual: the Civil War freed the slaves, made impossible the former leisure except for a wealthy few. Many families, impoverished by war, moved in from the ravaged lands of the South to settle in this sympathetic atmosphere. More people and no



Built in 1836 of massive walnut logs, the old hotel at Cincinnati Landing stands on the banks of Salt river, mute testimony to a dream that faded. Flat-bottomed barges once loaded salt here; Gen. Grant slept within the hotel where Mr. and Mrs. J. W. Settle now make their home.

slaves meant more and smaller farms, more intensive agricultural use. The prairies and woodlands began to suffer under harsher treatment born of necessity. Silt began to escape the newly-plowed slopes and settle in the streams. The water took a little longer to clear after each rain; surface springs began to dry up; the river became more cloudy and shallower. Yet because the people loved livestock, especially fine horses, and because they had none of the hatred for trees so prevalent elsewhere, the last possible acre of grass was spared the plow, and much of the timber escaped the axe. For another epoch in the human history of the watershed, the river wound its way in balance with the new way of life.

Then came World War I, with the rise of the tractor, the urgent call for more production, and decline of the horse. Pastureland was no longer vital; cropland had to be increased. The effect upon the river of this great stirring of the soil is summed up by Paris Editor R. I. Colborn's remark—"Fishing went down in Salt river when the saddle-horse passed out of the picture."

Yet, though fishing and the river went down, they were far from out. The variety, size, and abundance of fish in this Mississippi river tributary must have been astounding in the old days, judging from the catches that are made there now.

The effects of silting are most evident in the upper, smaller tributaries: Long Branch, Littleby, Spencer, Otter—these were once real bass streams; they aren't now. Larger, rockier Elk Fork and Crooked creek still yield fair catches

of this favored species. As for channel cat—there is probably no better stream in the state than this one. Good catches are made here of drum, river and flathead cats, bullheads, sunfish, buffalo, and carp. Some areas yield white bass, crappie, and jack salmon—they tell me that a man can catch a few smallmouths, if he knows where and how.

But there's a catch to fishing success on the Salt river. Bountiful to those who know it well, it is apt to be reserved with strangers. Drive to it blindly, not knowing where you are going, and you are likely to hit it where it is too deep to wade, with banks too brushy or steep or muddy. And the fish are "notional." When the water's murky, as it is these times for days after a rain, artificial bait is no good. When the water's falling, or stagnant in the hot days of deep summer, there are long periods when nothing's any good. The fruitful periods are few on the main stream, though when the fish are taking they furnish ample proof of their presence.

On the upper tributaries fishing conditions are easier, but the same long periods of murky water prevail. There are more sunfish or "perch" on these smaller streams to furnish faster action; nowadays larger varieties are few. All in all, the Salt is a great stream for those who know conditions, or for those who keep coming back till they learn, but a poor risk for those who don't know and are too impatient to get acquainted.

The game story is similar, showing the same slowness of change. The turkey and bear and ruffed grouse are gone, but not long gone. Turkeys were still found in 1900, deer in 1910, grouse in 1920. Bobcats stayed longer, and there are those who doubt they ever completely disappeared. Prairie chicken and plover have held out on the prairie remnants, but not strongly. The quail and squirrels and rabbits have never been seriously in danger—but old-timers who remember the days of real abundance will call you on that. The present level of quail is around or above the state average, but it looks low to a man who can remember when he took these birds by the net-full.

The future of the river is by no means dark, for it is the future of its people. These people who never permitted erosion to wreck the region too badly, who burned woodlands only by accident, who left field margins and steep slopes and creek banks in natural cover, who doggedly held on to as much livestock and pastureland as they could—these people of the Salt river basin are also taking hold of modern soil conservation practices. Many of them might not admit it, but in addition to their practical nature there is a feeling for good grass and deep woods, for streams and wildlife, that will not suffer the destruction of these values for purely selfish reasons.

You sense that feeling in the watershed. You find it in the fact that this is a fishing and hunting community; that you can get an argument on fishing or hunting or conservation with no trouble at all. You sense it in the statue of the Eternal Boy fisherman on the Paris courthouse lawn. You see it in the trails along the creeks, and you hear it in the music of hunting dogs on any frosty night.

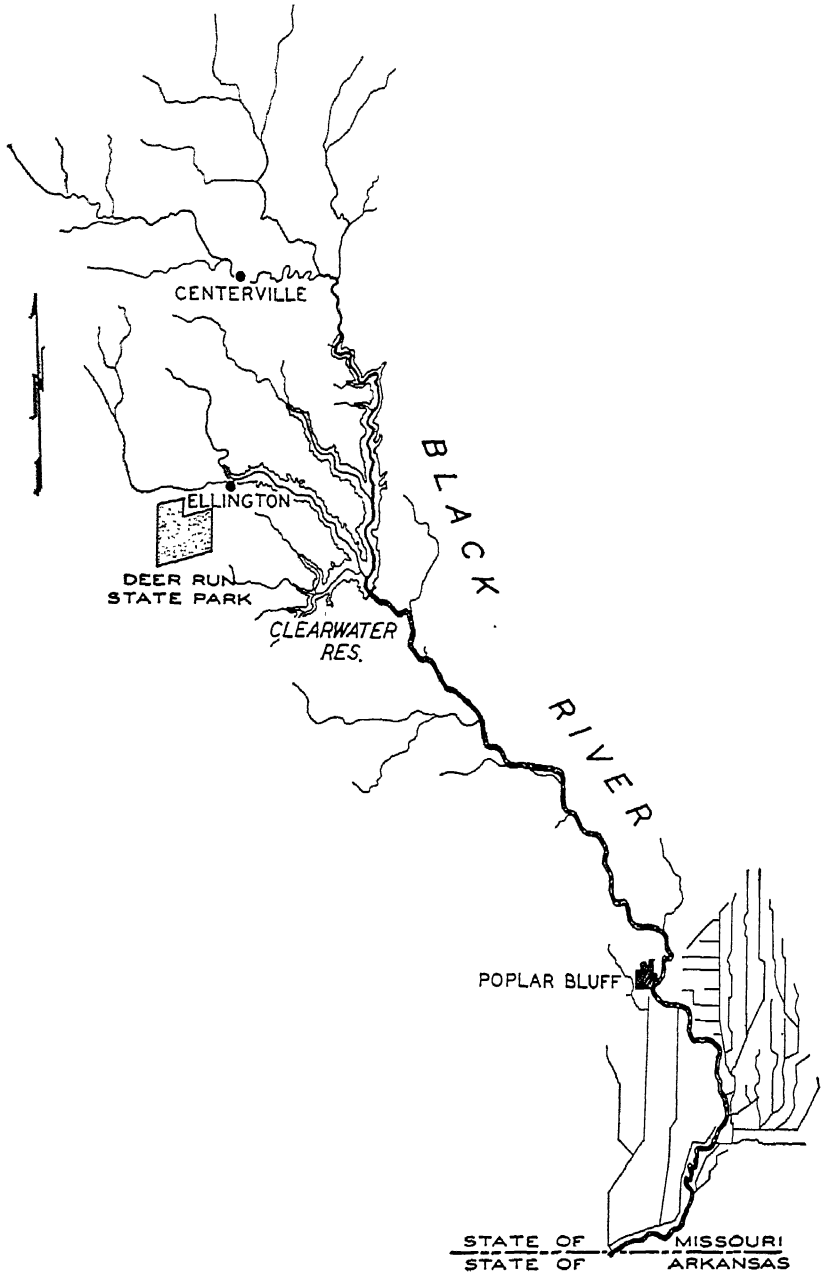
Listening to the old folks, you pick up the echoes of happy childhood-treasured memories of the Ole Swimmin' Hole, the big pawpaw patch, the Buzzard Roost Cave, and the deep hole "where Hattie caught the big perch." The river runs through these scenes of memory as it does through the family albums, in faded photographs of long ago.

In the yard of the Monroe county courthouse stands this fountain—a symbol of the deep feeling for boyhood that dwells in the Salt river country that gave birth to Mark Twain.

Thus to the old meanings of the phrase "Up Salt creek" has been added something richer and more fundamental. It connotes a region and a way of life, the qualities of which are evident in the pageant of great names whose owners were nourished on the soil and water and philosophy of the Salt river basin, and just as surely—though not as spectacularly—in the atmosphere of stability and progressiveness pervading the basin today.

* * *

The story of a river is the story of its people. Whichever way you tell it, it comes out the same. When you see a fast and muddy river, you are looking at a people who are doing fast and sloppy farming; when you see a river flow steady and clear, you know its people see clearly and don't rush their ground. When you walk a river trail and find prints of small bare feet you are walking by the Children's river, and you've no fear for a folk that know that they are in some part the River's Children. No fear, either, for the future of the river that flows not only though farm and forest and rock but through the lives of its people.


CENTERVILLE
ELLINGTON
DEER RUN
STATE PARK
CLEARWATER
RES.
BLACK
RIVER
POPLAR BLUFF
STATE OF
STATE OF
MISSOURI
ARKANSAS

The River That's Called Black

By C. E. Resinger

Up in the high, wild hills of Reynolds and Iron counties, trickles of water arise and begin coursing a narrow way to a junction. Fed by a thousand springs, these trickles become creeks—and they join to form The River That's Called Black. It isn't really; for most of its length it is a clear, sparkling stream.

Once formed, the Black river flows in a generally southerly direction for some 300 miles, with Current river finally forming a tributary, to join the White river near Newport, Ark., and the two mingle their waters as they head for a junction with the Father of Waters in a swampy, duck-haunted region. But in Missouri, the Black rushes through some of the roughest terrain of the Ozark plateau, suddenly bursts from the hills into flatlands and meanders slowly through a part of Butler county before crossing the state line that no river ever recognizes as having meaning.

It is a river of contrasts. If a fisherman, idly whipping a fly on the crystalline upper reaches, were magically and suddenly transported into the lower area, he could not believe it was the same stream. The transformation is great, and comes in comparatively few miles. From Poplar Bluff southward, the Black becomes almost typical of the Deep South. Giant sycamores, oaks and gums interlace themselves over the waters; cypress knees protrude from the marshy banks; everywhere, green clusters of the parasitic mistletoe hang in trees. The water itself changes, becoming murky, in contrast with the hill-springs of its Wayne, Iron and Reynolds counties sources. Our transported angler might not be too surprised to see a giant alligator gar, sunning itself in some quiet eddy, and he likely would run across broods of "squealers" or wood ducks, near their nest in a hollow of a giant tree.

But all the way, the Black has beauty. Even the insidious gravel bars, all too common on the upper end, have a certain grace. Deep bluff holes are still plentiful, although they are being shallowed by the encroaching gravel. Smallmouth bass abound in the higher reaches, with Kentucky and large-mouth bass, and occasional jack salmon, peopling the lower river.

The stream sometimes offers excellent fishing, even now; it must have been a paradise for anglers before the watershed was cut and burned off, before subsequent erosion on the surrounding hills filled in the deep holes and choked the swift-running waters between those holes. The old-timers tell with nostalgia of happier days on the river, before the sawmills and tie-rafts took their toll.

One veteran of the Black recalls a float from Riverside, in Reynolds county, to Boom Ford, in Wayne—some 10 or 12 miles by water—when he took 52 smallmouths with an aggregate weight of something over 100 pounds. This was before the common use of the "patent minner," as artificial lures are called locally. Tackle then was a cane pole, a short length of string and a bucktail fly with spinner attached.

Other old-timers speak of then infrequent floats coming downriver with strings of bass, goggle-eye and jacks as "long as a well rope" trailing behind the boats. All the smaller tributaries, too, were teeming with bass. After the introduction of artificial lures, the one in most popular use was of the 15-hook variety, usually rainbow-hued in color, and the taking of two or three bass on a single cast was not unusual.

Game abounded along the river, then, even making allowance for the optimism of memory. Deer and turkey were plentiful—and the market hunter took a heavy toll. Almost everyone took game for family consumption those days, but the stores, particularly in the larger towns, offered for sale saddles and hams of venison, wild turkey, and smaller game in abundance. From the watershed, thousands of pelts of mink, raccoon and other furbearers were shipped to the great fur houses of St. Louis.

But man, ever driving for development and expansion, destroys these things. One of the prime factors in the development of the watershed also sounded its death knell. In the 1860's and 70's, the Iron Mountain and Southern railroad (now part of the Missouri Pacific) pushed across the western part of Wayne county, from north to south, and into Butler county, along a considerable length of Black river. The dense forest of pine and oak, almost untouched over the entire area because of the lack of shipping facilities, now became the center of a swarm of humanity—temporarily.

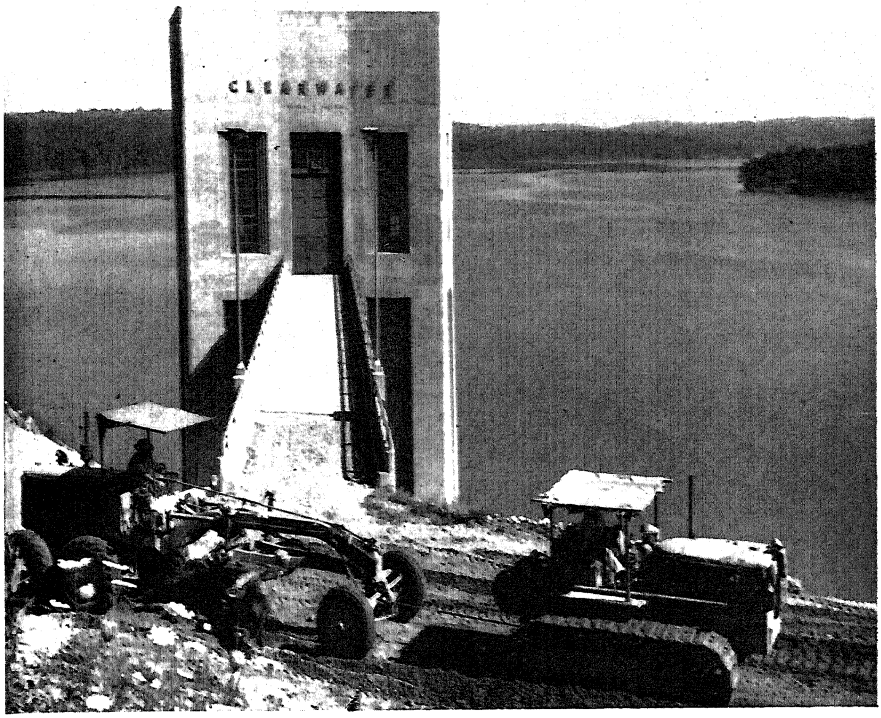
Because of the railroad's influence, the timber industry grew at a terrific pace in the period from 1890 to 1910. Great log drives were organized on the upper river, particularly in Reynolds county, and rafts of logs several miles in length were floated, pushed and sweated down to shipping points along the railroad. Most of these drives originating in Reynolds county ended at a point near the town of Leeper, in Wayne county, where the railroad picked timber up for distant markets.

After all these years, much physical evidence of the big log runs still remains. At picturesque Logslide Bluff, an immense face of stone and earth towering several hundred feet above the clear water, great scars on the bluff-face mark the spots where tons of logs cascaded down into the river, with a rumble and roar that, even now, one can almost hear in retrospect.

But large as are the scars caused by sliding trunks, even more mighty are the less evident scars which are a direct result of all this exploitation of the timberland. For these latter wounds still fester in the land. Instead of the towering trunks and the leaf-framed vistas through the trees, a dense growth of brush now covers the region, replacing the timber monarchs that fed ravenous sawmills. And man, in an effort to control this brush, began the practice of burning.

Then, on the burned-out hills and hollows, without the mat of leaves and vegetation to hold it back, rains fell and have fallen since, and with each rain more gullies were washed out. And the topsoil and the rocks were carried into Black river and its tributaries. Then the gradual filling-in of the stream began, the great gravel bars were formed—and the fish supply began to diminish. And there was another result:

With the timber gone, with fire scourging the water-holding mat of leaves and rubble that once floored the forest, the rainfall charged down from the hillsides into the narrow valleys and piled up. Floods! Fertile farmlands

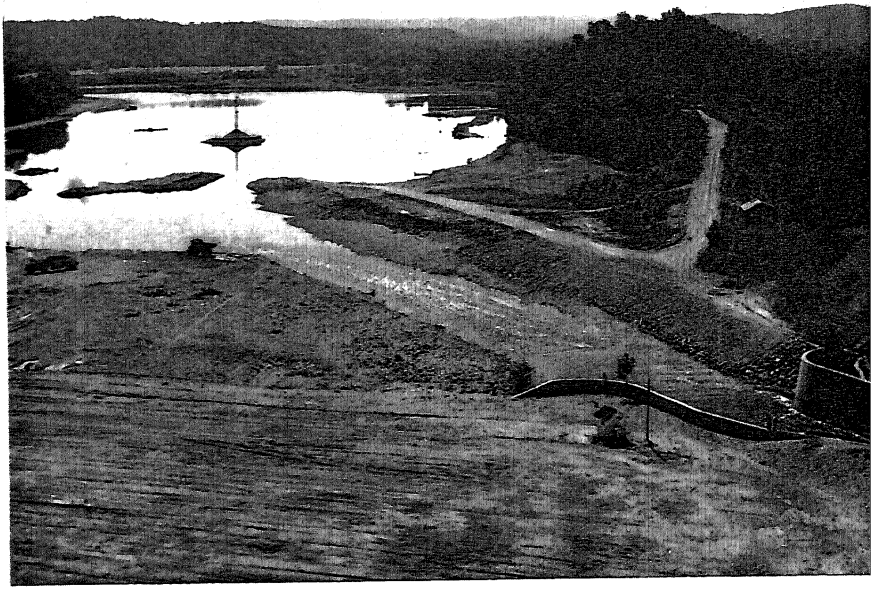


The gate tower at Clearwater Reservoir controls the water level on this new Missouri lake, built by the Army Engineers. The dam was completed in 1948 and the reservoir was filled that fall.

along the river bottoms were in constant danger of inundation; even towns were not safe from the threat. Poplar Bluff, largest city of the watershed with 12,000 people, came to expect at least one flood a year, with a turbid flow scouring the town's lowland areas and disrupting the lives of citizens and their commerce.

In May, 1940, the Department of Army's Corps of Engineers began the construction of a gigantic earthen structure on the Black river, naming it Clearwater dam. The primary objective of the engineers was to reduce these devastating floods on the Black, with a further hope for secondary control on the White river. War interrupted this work, which was suspended in August, 1942, but construction began again in May, 1946, and the main job was completed in the fall of 1948. Clearwater was built to handle a tremendous fluctuation of water, with the idea of thus achieving some measure of control of the floodwaters.

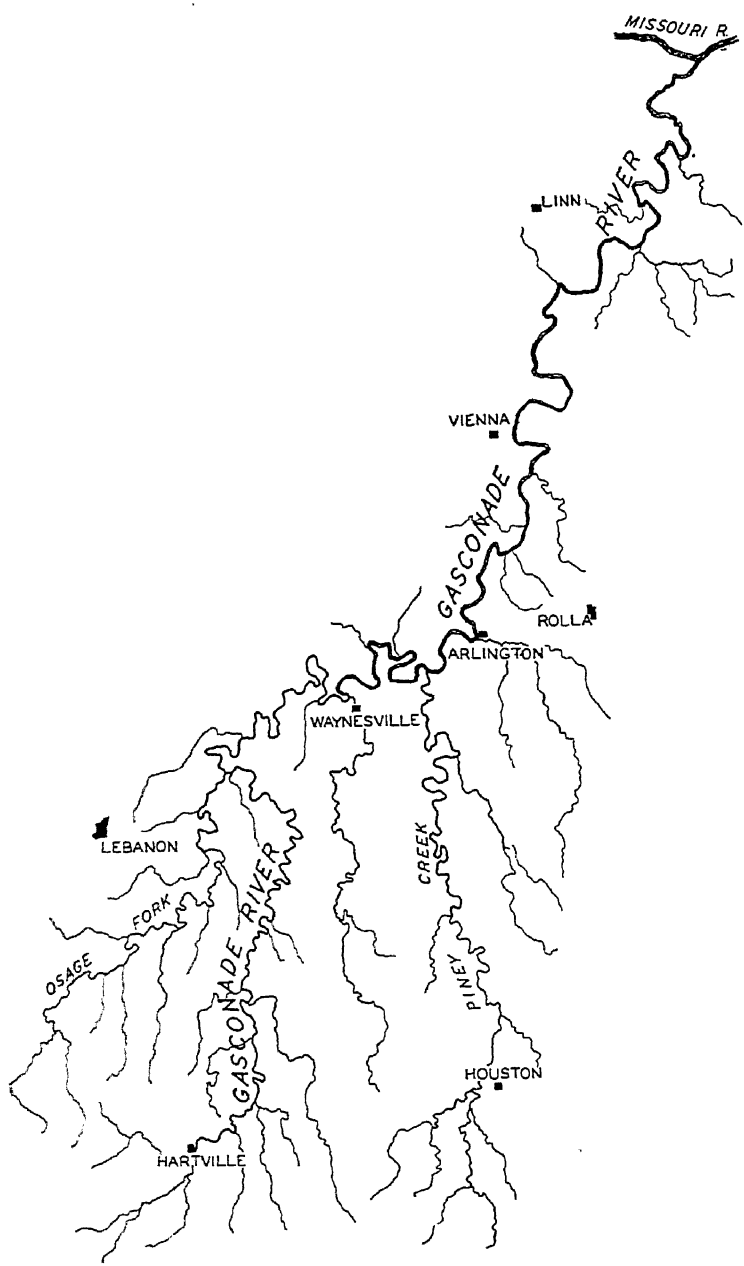
Clearwater dam is located approximately five miles southwest of Piedmont, just about the Wayne-Reynolds county line. It has created a lake with



Black river below its dam, after the stream has passed through Clearwater reservoir.

a shoreline of approximately 1,650 acres of water surface—but at full flood stage, a surface area of 10,350 acres will be covered, more than six times the normal situation. Plans have been made by the Corps of Engineers, the Missouri Conservation Commission and other agencies to manage this lake and its adjacent area for maximum benefits as a fish and wildlife region. Fish have been placed in the lake proper and camping sites are planned for development within the basin. A fish study has been made on the lake, under Dr. Robert Campbell of the University of Missouri, and further research goes on each summer.

But that is something else. This has been a story about a beautiful stream, a river that has not deserved the fate thrust upon it by man and his unwise uses of the land. And even yet . . . let the burning cease, reforest the hills and hollows, let man use discretion in his search for ease in the outdoors . . . the upper reaches may once again become as productive in Nature's pattern as the Black once was.


MISSOURI R.
LINN
RIVER
VIENNA
GASCONADE
ROLLA
ARLINGTON
WAYNESVILLE
LEBANON
FORK
OSAGE
GASCONADE RIVER
CREEK
PINEY
HOUSTON
HARTVILLE

Autobiography of The Gasconade

By Dru L. Pippin

"Hear ye, hear all! I am the Gasconade, born in the wooded hills and glens of Wright county and nourished by hundreds of cold springs, ever-flowing northeasterly, going about my meanderings in much the same fashion as I did in 1540 when Don Francisco Vasques de Coronado set forth from the Kingdom of Nueva Galacis (Northwestern Mexico) to discover and conquer the seven cities of Cibola. That was long ago and my memory fails me, but it was just possible that Coronado and DeSoto camped so close together near my mouth, one July or August in 1541, that an Indian runner might have carried tidings between!

"When you read about the other waters in Missouri, it is some human telling the story, but no one talks for me! I am the Gasconade and if there is to be any Gasconading about me, I intend to do it myself. I have every right to brag or be extravagant if I want to; Noah Webster gives me special permit by saying that a Gasconader is one who is a 'braggart, given to blustering and boastful talk.' That's me: the Gasconade, a true-blue, one-hundred-per-cent Missourian!

"I am pretty sure that Du Tisne gave me my first name, Blue river, but it was too commonplace; after the year 1718 I was called Gasconade by everyone. I am unable to tell you who gave me this noble title but I am sure it is not Indian nor is there any tradition of Indian origin. I think someone from the province of Gascony in southwestern France named me. The people of Gascony were long noted for their extravagant claims for the fine vintages of their province and were called Gasconaders by neighbors jealous of their skill.

"I think a few of these Gascons sailed from France, up the St. Lawrence, and through the Great Lakes, down the Mississippi, and up the Missouri and at last were trapping on my shores. Surely one of these fellows was awed by my beauty, entranced by my swishing rush over shoals, and soothed by the tranquility of the clear blue eddy below. Perhaps this stillness reminded him of his ocean voyage and the calm before a storm. Probably my roar over the shallows reminded him that I, too, was boasting; to him I might have been Gasconading. I cannot say, but Gasconade it was, and Gasconade it is for all time to come.

"If I could only remember accurately, I could tell you about the primitive men of centuries ago who used me, but never abused me, who made war on their enemies for violating sacred rights, and who finally laid their leaders to rest on my highest bluffs under piles of mounded rocks. Still others lived in caves by my shores and buried their dead in the mouth of these caves; today those interested in what went on a millennium ago have dug as deep as thirty feet to find a layer of dirt, a layer of wood ashes, a body, then another layer of dirt, additional ashes and more bodies showing that generation after generation lived, loved and died on my shores. The trinkets of stone, burned

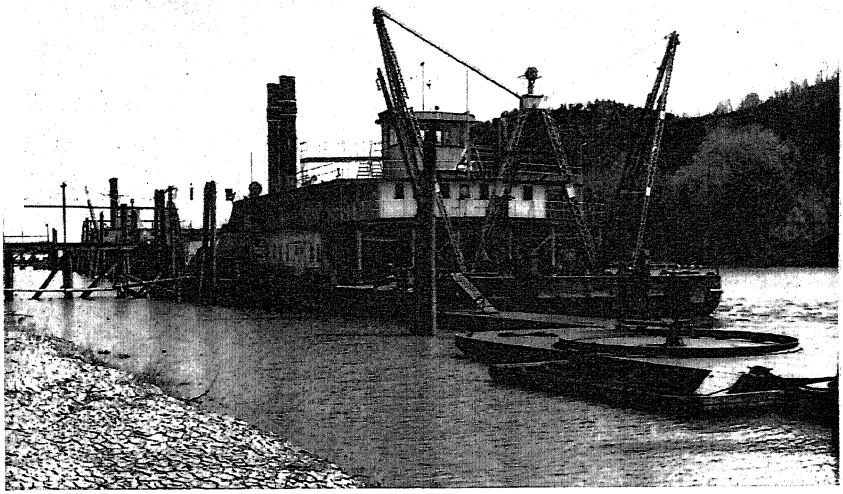
parts of earthen ware, stone hammers, axes, spears and arrow points that are dug up or washed up in my fits of flooded anger leave it to your imagination as to whether the makers of these were the Indians of 1540—or a more civilized people who preceded them.

"I think the first white man I ever saw was a Spaniard. Oh, I know it is generally thought that the Frenchman was the first to discover me, but I'm almost sure that the men I saw were detached from DeSoto, who crossed me in reaching a point in Missouri about where Springfield now stands, before turning southwest to Arkansas. The only chance of my being wrong is that they might have been with Coronado instead of DeSoto. They should have kept a chronicle to bear me out. Maybe they did, but it was never found; all you have for this thought is my word for it. The first fellow who ever took time to put in writing what he thought of me was that Canadian, Du Tisne, who in the summer of 1718 tells of the forests of walnut, sycamore and oak and the 'very beautiful country of hills and rock.' In writing of his trip up the Missouri, he calls me Blue river and says that I am not of much consequence! Obviously, he was wrong. The fool!

"The reason I know he was talking about me was that he named the next river upstream the Riviere des Osage. On his return he went cross-country, which led him across the broken highlands of the Meramec, Gasconade and other tributaries of the Missouri and later he reported on my beauty and named me the Blue river.

"In my age-old travels, I have observed a lot; in my everflowing rotation —to the gulf, evaporation, clouds, winds, temperature changes and back in rain drops—I have had ample time to compare olden days with the present. I well remember when it took me much longer to make a round trip than it does now, because as a raindrop I soaked down deep into the leaf mold and the underlying porus soil. Now it is a race as to which drop can reach my stream bed first; something has happened to the humus that formerly sustained me and there is nothing left to do but run down hill as fast as possible. My earliest human guardians sought only food, water and shelter; in satisfying their simple wants from my shores and my waters, they had security. They destroyed only that which was necessary for their self-preservation.

"Then one day I heard men speaking of fabulous wealth, gold and splendor; and there was an air of restlessness, and a searching for riches. I paid little attention to this until about 1744 when about 200 Frenchmen living on the Missouri started commercialization of furs. Laclede, Dominique Ducherne, Juan Munie, Manuel Lisa and Lewis and Clark, who camped at my mouth on Sunday, May 27th, 1804, brought news of unlimited trapping possibilities. From that time on I noticed a change. Men wanted something besides food, water and shelter; they wanted to kill for the fur and to trade this fur for a thing called money. I gave it little thought at the time, because there was still an ample harvest without hurting the supply and nature's ability to replenish, but I realize now that this was the beginning, that men would destroy natural resources faster than they could be replenished. I was to find out that some to follow wanted my timber while others wanted the stored-up fertility of preceding ages, and were eager to chop, saw, grub, and plow to transform this virgin fertility into things that could be exchanged for gold! Who can eat gold?



U. S. Corps of Engineers have a station and boatyard at the mouth of the Gasconade, where it joins the big Missouri after a twisting trip through the Ozark country.

The upper river offers magnificent views, such as this one from Kissinger Point or the more famous—but no more spectacular—lookout at Portuguese Point.

"In 1808, I well remember, only two families lived on my banks but by 1813 Sylvester Pattie had started a grist and saw mill, using me as his vehicle of transportation to get lumber to St. Louis. In 1811 Isaac Best had established a horse mill near my mouth. His was a tough time, for his steeds were prizes for unfriendly Indians who routed him and his family and were away with the horses. Where Isaac Best had his mill, a little hamlet sprang up and took the name of Gasconade. Years later it came near being named the capital of Missouri, missing by but two votes. It still stands as the village of Gasconade, with its Army boatyard in my mouth.

"I'm going to tell you something that may shock you. Did you know that I am considered, by those who know me best, as the most crooked river in the world? I have never done anything dishonest that I know of, except to steal good Huntington Silt loam from my farmers' bottom fields, but I can't help that; I get my belly so full of water that I cannot hold any more and there is nothing for me to do but spread out. And the fuller I get the faster I flow and, naturally, the more I pick up. If my human friends would only watch the forest fires, harvest just the timber which is ripe for market, replenish with new growth, plow on the contour, terrace the slopes, do everything they can to hold the raindrops where they fall, and practice good land use management, I'd stop a lot of my taking ways and help bring back conditions as I remember them. Then the things that walked, swam and flew all got along under nature's laws with the things that talked.

"But how did I get to telling you about my belly ache when I was talking about my crookedness? Every drop of me comes from Missouri and while I have numerous feeding streams, from where I start to where I end cannot be over 150 miles as the crows fly. Yet as I meander through the valleys from Wright county to Gasconade county I imagine I run close to 500 miles. It's a wonderful run, too, steep bluffs, gorgeous cuts, hairpin turns, and lazy eddies; hardwoods, softwoods and dogwoods, hidden logs, protruding boulders that weathering has tumbled from adjacent cliffs, wild flowers and shrubs, birds and bees, four-legged creatures quenching their thirst at my water's edge, while listless white clouds float above as though convoying my trip.

"If you have floated me you will know the beauties I offer. I harbor the smallmouth bass, his cousin the bigmouth, and that red-eyed glutton, the rock bass; I boast of channel cat and crappie, all species of perch, drum and jack salmon as well as the so-called rough fish that round out nature's balance. I have fish that love worms or dough, like minnows or crawdads, prefer the tricky plug or lie in wait for that deceiving fly. From an inconspicuous beginning of Wolf, Whetstone, Clark, Elk and Beaver creeks, to be joined by the Osage Fork, Roubidoux, Big and Little Piney and many other creeks and springs, I finally reach grown-up proportions near Vienna—which recalls to me the memories of days when steamboats fought against my strength to take away the resources that I nourished before man discovered Quivira, the land of fabulous wealth.

"To me the years have gone swiftly because I have been a busy river helping those pioneers in their building program. Thousands upon thousands of pine logs from the Piney branch of my family were rafted down stream. Untold numbers of railroad ties came from every section of my drainage area to be transported by me to Gasconade City or Gore, there to be loaded on flat

cars of the Missouri Pacific railroad, while others were snubbed at Arlington and shipped over the Frisco. I'll never forget those weather-defying, grizzled men of the rafts: Bob Miller, Obidah Bludsoe, Bill Reed, Joe Thompson, Steve Owens, Emil Boyer, Charlie Mitchell, Bub York and many others whose names slip me now; their's was a life of adventure, exposure and hard work. They got a daily wage of seventy-five cents to a dollar—and boarded themselves! When their rafts were delivered by me, transportation home was no problem for each had two strong legs to carry him cross-country for the next trip.

"Later on, open hull barges were put into operation. These were flatboats with open hull bottoms and a board walk on each side, with three men on a side to pole the boat along and a steersman behind to steer or snub as the case required. My shoals never became too shallow for these boats to operate and you'll be surprised to know that many times they carried two car loads each of grain or livestock. These were commonly called 'jug boats' because when they started upstream from Hermann or Gasconade they usually carried a supply of jugs, and these jugs *started* out filled with barleycorn. Many tie rafters rode the jug boats as far as they went upstream, before changing to 'shanks mare.'

"The first steam boat I remember was the *Lottie Lewis.* She was looked upon with skepticism by many people who said I was not navigable, and her subsequent sinking at the 24-mile mark seemed to prove for the time being that I was a jug boat river only. In 1878 that grand old river captain, William L. Heckman, Sr., took the sidewheeler *Washington* upstream as far as Rich Fountain. Then came the largest boat I ever floated, the steamer *Gasconade,* along with the smallest and fastest of them all, the *Kingfisher.* She successfully brought out wheat and livestock at dead low water. The farthest any steamboat fought my strength was when the steamer *Royal,* in charge of Capt. Heckman, Sr., went upstream as far as Arlington, 107 miles from the Missouri, in the year 1883. She carried two car loads of wagon timber from Rever Rock to Arlington.

"Like father, like son. Capt. William L. Heckman, Jr., in 1892, piloted *Mill Boy* from Hermann to Vienna each week during a season beginning March 1st and lasting until July. Captain Bill still lives at Hermann and still loves me. He is, even yet, a commissioned pilot and holds a federal license to operate steamboats on my waters. You'd probably find him fishing if you went to see him; he's only in his eighties.

"There were many other pilots: Henry, Gustav, Gilbert and Albert Wohlt, and the five sons of Capt. Heckman, Sr.: William, Samuel, Frederick, Ed and John. I remember Henry German, Frank Blaske, Henry Burger, Hal, Tom and Sterling Dodd, Hanson Chadwick and Henry Zibelin. There were others, all honorable, fearless men who lived by the sweat of their brows and their ability to master the strength and treachery of swift, shallow shoals, submerged logs and hairpin turns that I would throw against them. Oh, they were worthy opponents, those men.

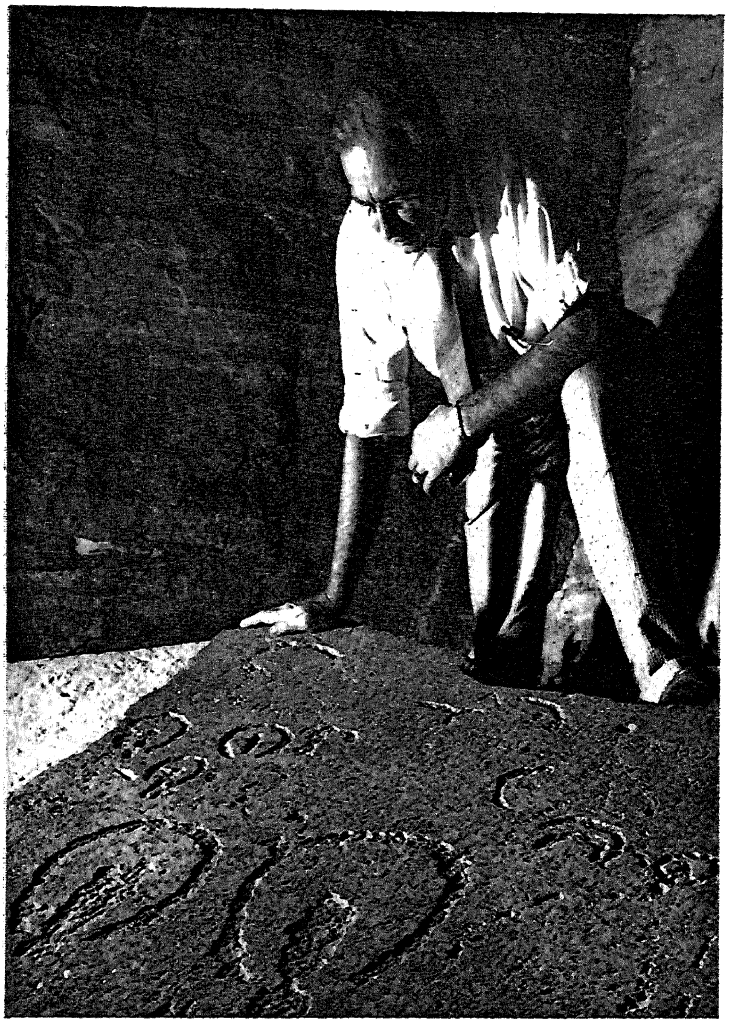
"When I look back over the years, starting with the red man who lived on the fish and wild creatures I nurtured, the traders and trappers who commercialized the furs, the rafting of my timber, the miles upon miles of railroad ties that I have carried, the plowing of my fields, the burning of my undergrowth, the present pressure of fishing and hunting, I marvel that I have

been able to foster as much wildlife as I still have today. I saw the older Heckman and his sons, Sam and William, Jr., catch 200 pounds of bass on a float trip from Mt. Sterling to Second creek and they threw away every bass that did not weigh two pounds. I had many otter and beaver at Scott's Island in 1887; the otter disappeared but the beaver are coming back now. I have seen ducks and geese resting so tightly on the water that late comers had to light elsewhere. I remember when Simon Boeger at Bay bought a world of game, even remember a Mr. Flitch selling him my prize wild turkey gobbler, that weighed 45 pounds, for 75¢. It took a good deer to bring four dollars. I probably will never live to see as much wildlife again as I had in the olden days but on my daily meanderings I note a few wild turkeys, many more deer and—maybe I imagine it—I'll wager I have more fish than ten years ago. I hear people discussing what can be done to make my waters more productive. I say to them this one simple thing: I'll be as productive as before, and as well behaved, if you will make my soils fertile, if you will follow good soil and timber management practices. You scratch my back, I'll scratch yours.

"An adventure that many of you have never heard about happened on November 1, 1855. The Pacific railroad (now the Missouri Pacific), was under construction from St. Louis to Jefferson City and the first excursion train carrying notables to the opening of the Missouri Legislature was being run. A bridge had been spanned across me at Gasconade and thought to be strong enough to carry the train because it had successfully supported a gravel train the day before. When the excursion cars came to the bridge the steam was turned off and the train allowed to drift across the bridge. But the speed was too great; the engine broke through the bridge and fell into my waters, killing 43 persons and injuring many others.

"Probably the most colorful and eventful pages of Missouri history could be written about the experiences I have had with my other railroad, the old South Pacific, later the Atlantic and Pacific and now the Frisco. Until 1867 the terminus was at Arlington and Jerome (then called General Fremont's Town). It was the first railroad destroyed by Confederate forces; later, completion westward changed to a new right of way, leaving for present generations discarded fills, tunnels and cuts, all dug with pick and shovel, black powder and mule-drawn conveyors. Workers claimed by accident or sickness reside in an unmarked plot of ground called the Irish Grave Yard. The terminus at Arlington seemed destined to be a large settlement, right on my shore line, and until recently the first courthouse still stood as a reminder that here had been the seat of law, order and justice in five successive counties, St. Louis, Gasconade, Crawford, Pulaski, and, finally, Phelps. Business moved on with the completion of the Frisco westward, and this once thriving center of population became just another historic spot, ending its colorful part in history by being sold as a town in its entirety to an individual for the rumored sum of $10,000 in 1946.

"The years of '61 to '65 were trying times, with my people divided on issues of state and nation, and my waters carried the red blood of young manhood, shed in pitched battles between North and South. The battle of Hartville on January 11, 1863, resulted in seven Federals killed and 64 wounded while Confederate losses were claimed at 300 killed and wounded with two officers and 27 privates taken prisoner. General Marmaduke in his report of February 1, 1863, claimed it as a Confederate victory, though, with 33 killed,



The author of the Gasconade essay examines Indian hieroglyphics carved in a giant rock high up on a bluff above the Big Piney tributary. Near by lies Miller's cave, where patient excavation has turned up evidence of centuries of occupation by primitive man.

Waynesville-on-the-Gasconade: a photostat of an original drawing made by Woldeman Fischer on New Year's Day, 1863, when the 5th Cavalry under Col. Albert Sigel was encamped in the Pulaski county-seat.

103 wounded and 29 missing and 303 Federals taken prisoner and paroled. There were several skirmishes, running fights, and many incidents of pillage and murder during the trying Civil War period.

"I remember in the fall of 1861 the majority of the people in Pulaski County, especially near Waynesville, were southern sympathizers and even erected a Confederate flag on the courthouse lawn. The Union command at Rolla sent word to take it down. When their warning went unheeded, troops under Col. Albert Sigel rode into Waynesville—to find that a few minutes before the flag had been cut down and most men of military age were on their way to join Confederate forces to the west. Col. Sigel built a fort on the bluff overlooking Roubidoux spring, which now supplies the water for the trout fishing branch of my family. This fort was of earthen works thrown up from a moat or ditch about 4 x 4 feet wide and deep; behind it was the real stockade, surmounted with rock and timbers and pierced with port holes. This post had control over the surrounding country and was an important link in the Federal communication line from Springfield to St. Louis over the 'Trace' or old wire road. Three companies of soldiers lived off the fat of the land and fought the bushwhackers who made lives miserable in the area, quite apart from killing a few prominent citizens because they were thought to have hidden treasure. Despite this, and an occasional holdup of the stage coach on the wire road, my people weathered their misunderstandings and continued to send their sons and husbands to fight for the cause they deemed right.

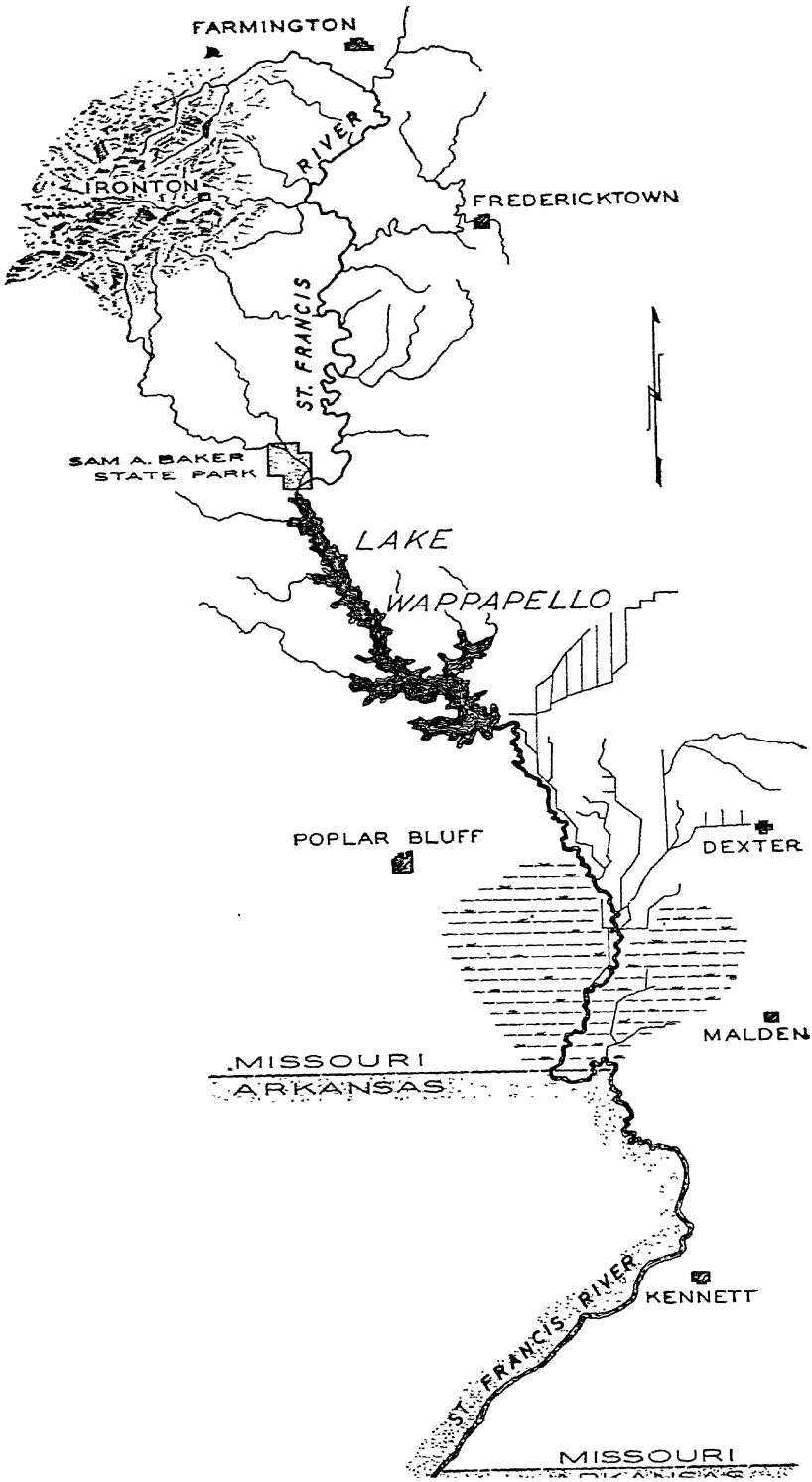
"I played my part in World War II by furnishing some 90,000 acres of land on my Big Piney tributary for Fort Leonard Wood, where thousands of troops used my waters for engineering training that they might better protect freedom. Yes, I have seen a lot; I have played my part in history and my

prayer is that generations yet to come will let me flow unmolested and unimpounded by man-made dams, that I may continue to bring peace, relaxation and wealth to the people who use me.

"My big springs—Miller, Prewett, Stone Mill, Roubidoux, Schlichts, Bubbling and Bartlett, Shanghai, Piney, Boiling, and many others—keep me ever cool and clear. Time will not permit me to tell you the individual story of each spring; their basic tale is one of turning the wheels that spun the old French stone burrs to grind the corn and wheat that nourished my people. Their's is almost a lost art, pushed aside by steam and electricity, but still claiming a finished product that modern invention could not surpass in quality and food value. Their's is a story of gathering places for men hungry for human association and the exchange of news; their's is a story of hardships and simple pleasures, of sweat and toil that polished the rough diamond and handed down a heritage to each succeeding generation to use and not abuse.

"I am Old Man River, a Gasconader from 'way back, just trying to tell you that in my hills and on my waters God still speaks in a voice not muted by the noises of civilization nor choked by the smokes of industry. My dancing waves beckon you to come breathe of the clear air, feast your eyes upon my variegated autumnal dress, or gaze through my misty purple haze at sunset. I invite mankind to visit me and partake of that spirit of romance that permeates my region. To walk besides my clear sparkling waters and to lose yourself in my natural charms is to realize that man is not alone upon the earth.

"I am the Gasconade. I have spoken."


FARMINGTON
IRONTON
ST. FRANCIS RIVER
FREDERICKTOWN
ST. FRANCIS
SAM A. BAKER
STATE PARK
LAKE
WAPPAPELLO
POPLAR BLUFF
DEXTER
MALDEN
MISSOURI
ARKANSAS
KENNETT
ST. FRANCIS RIVER
MISSOURI

St. Francis of Missouri

By G. B. Herndon

A LARGEMOUTH BASS SPEAKS:

"Listen, my children, as you swim by my side in this shallow bay for the last time before breaking school and wending your way on life's voyage in this changing world. I shall give you a fish's view of the St. Francis river, as created by Mother Nature and changed by man's inconsistencies. This is a long story but not a pretty one. It has been the custom of our black bass family for many generations to pass on from ancestry to posterity our traditions, customs, and folklore. Man calls these things heredity and instinct. It is my proud parental duty to pass these on to you and to acquaint you with the life of a black bass.

"I have lived long and well only because I have profited by past experiences. That, my children, is known as survival of the fittest. I am the father of millions, and known as the Sage of the St. Francis. If you are to survive to a ripe old age in this changing aquatic world, you will heed well what I am about to impart. You will learn, for example, why a black bass instinctively strikes at man-made lures resembling nothing that swims, walks, flies, creeps or crawls. You will understand that we do this as an expression of utter disgust at man's inattention to nature's many warnings and the resulting slum conditions with which we are confronted.

"Our ancestors tell us there once was a time when the Upper St. Francis river and its tributaries rippled laughingly downstream, full of cool, clear, fresh water teeming with happy, thriving fishes. Let us have a geographic look at what nature originally gave us.

"The St. Francis has headwaters in St. Francois, Iron, and Madison counties, among the granite knobs of St. Francis mountain. It drains a portion of Taum Sauk mountain, with an elevation of 1,772 feet above sea level, the highest point in the state. It flows through Madison and Wayne counties, and forms the boundary between Butler and Stoddard counties, and between Dunklin county and the state of Arkansas. That part of the drainage basin in Missouri is approximately 100 miles long. The river leaves the state at approximately 235 feet above sea level—the lowest point in the state. In the upper end, the basin is narrow but quickly widens to 30 miles, then decreases to 16 miles, and maintains approximately this width until it flows into Arkansas. The land in the headwaters is rough, stony and hilly, mostly wooded. Near their sources, the tributaries flow rapidly over beds of granite and limestone; because of the rock bed, there are few deep pools. These feeder streams are generally a series of cool-water riffles with little cover. Lack of springs allows some tributaries to dry and others become intermittent during rainless periods. The main stream has a more gentle gradient and the more moderately clear water meanders along the stream bed of rubble, gravel, and sand. The character differs little until the stream reaches Wappapello reservoir. During dry seasons in this section, the flow becomes very slow for so large a drainage

area. After excessive rains, a heavy runoff comes from the hills. Near Patteron, the water discharge has fluctuated between a flow of 6 cubic feet per second and 38,200 cubic second feet.

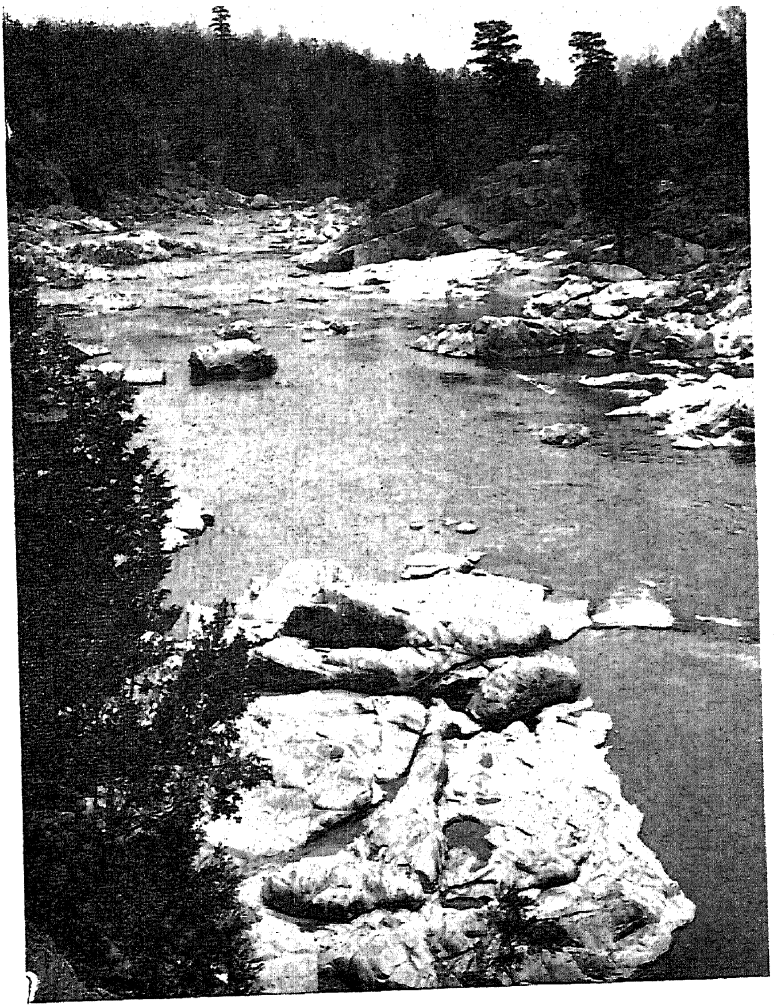
"At the lower part of the basin, the land is low and flat, and mostly in cultivation. The soil is silt, loam and sand. Below Fisk, in Butler county, the land was naturally wet and swampy but much of it has been 'reclaimed' by means of drainage ditches and levees. When the flood water reaches delta lands, the channel is unable to carry it and it spreads out over adjacent lands. Levees built by the Inter-River and Mingo Drainage District projects protect the lands from lesser floods but during heavy floods the levees will not suffice.

"The St. Francis, with its largest tributary, Little river, is the major watershed of the Southeast Missouri lowlands. When man first saw these lowlands, they little resembled their present aspects. All of the area was forested or under water; in the rivers and bordering swamps, wildlife abounded in the varied clearwater habitat. Games fishes had no lack of forage. The principal game species then were probably white crappie and warmouth bass in the lakes, while our cousin, the Kentucky bass, were abundant in the open streams.

"While hiding one day under a boat occupied by two angler conservationists, I heard that, in 1850, Congress turned over to the state legislators all swampy lands suitable for 'reclaiming.' The Missouri Legislature in 1869 gave the swamps and overflow lands to the counties in which they were located, the counties in turn gave or sold them to lumber companies or other agencies for 'development.' After the lumber companies had exploited the virgin stands of cypress and gum, they furthered their own interest by sale of cut-over lands, and began initial drainage attempts. At present, nearly all the lowland area is ditched and drained so there is little resemblance to the former condition. The only permanent waters inhabitable by fishes in this area now are the floodway ditches, and the St. Francis, which in this area is a typical rough-fish stream. However, it and the floodway ditches support a good population of largemouth and Kentucky black bass, white crappie, warmouth, and bluegill sunfishes. In dredging this vast area, thousands of acres were made tillable that are now unproductive. Unfortunately, these cannot be restored to earlier conditions with much success because of their location within good soil areas. Man has decreed that the lowland area must remain as it is, or become more fully drained, and the interests of fish and wildlife will not be permitted to interfere with the primary purpose of the drainage system.

"Nature watches over all animals. She keeps her books admirably, closes all accounts finally, and would always be able to balance them but for man. Man has never learned that he can't make important improvements in the quality or quantity of our natural resources. We fishes know that he can only improve his management use and conservation of them.

"Water is the greatest of all natural resources. It comes out of the atmosphere and nature intends that most of it shall descend into the soil, with excesses outflowing through seepage, springs and underground rivers. Lakes and ponds are formed, and stream beds are filled with water from this continuing supply. Thick vegetation and humus in the soil tend to retard runoff and increase passage into the soil, thereby building up the ground water table. The excess rainfall is thus gradually fed into the streams. In nature, little water is intended to run over or off the surface of the ground. Under these conditions, streams are usually clear and cool, and their flow is uniform, but man is a queer paradoxical creature never satisfied in his ambition to make progress. Remember well, my fry:



The St. Francis shutins, where the river "flows rapidly over beds of solid granite and limestone." This is some of the wildest, least-accessible country in Missouri.

"As a rule a man's a fool, when it's hot, he wants it cool.

When it's cool he wants it hot—always wanting what is not.

"In the St. Francis river, he got what was not. Through exploitation of timber, burning of forest lands, overgrazing of pastures, and cultivation of marginal slopes, he has facilitated the runoff of water in the uplands. This has promoted excessive erosion, rendered the streams turbid, and filled them with silt and sand until their volume fluctuates abnormally. Much less water now enters the soil and the ground water table is abnormally low. There is little seepage and no large springs occur in the watershed. The tributary streams are, therefore, intermittent in flow, so great evils have befallen our aquatic life. Some creatures have become extinct through restriction of habitat during low water periods. Others have been smothered by deposits brought down by flood waters. Forage and spawning grounds have been destroyed. The streams' capacity for water and for fish have been greatly reduced. Floods have been greatly increased. Man has again become a victim of his creations, so he builds a dam to hold the flood waters he has created.

"The huge Wappapello flood control reservoir was developed, and the black bass tribe found a habitat to their liking—for a short time! No sooner was the development completed than inwash from denuded slopes began to fill the basin. Man-made water levels fluctuated tremendously. The water remained turbid most of the time and light could not penetrate it. Fish foods could not be produced because all organic life is dependent upon the radiant energy of the sun.

"Minute free-swimming aquatic plant life uses this energy and thrives. Very small water organisms feed on them, and they are in turn fed on by larger aquatic animals, and so the fish food chain is developed, but the chain is broken when turbid waters prevent penetration of sunlight. A chain is no stronger than its weakest link. Some aquatic life is developed in very shallow water even under these unfavorable conditions, but along comes another flash flood carrying tremendous loads of silt. When the rolling flood waters reach the comparative dead waters of the reservoir, the silt is dropped, carrying with it to the bottom much of the small plant and animal life on which fish foods depend. These die, decay, and are lost in the deeper stagnant water. The lake bottom here becomes putrid, untenable to our life. A barren water desert has been created.

"The fact is well established that any body of water will support only a quantity and quality of fish in proportion to the quantity and quality of water. The latter is often much more important, as has been demonstrated here. In 1941 and in 1942 Wappapello reservoir furnished good fishing for black bass. As the water quality deteriorated, our black bass population was proportionately reduced. Surveys and anglers' creel censuses indicate that the harvestable crop of black bass has been reduced at least seventy-five per cent by 1948. It now takes approximately five times as much fishing effort to catch one of our family as in 1942. Crappies, which can do better in turbid, fluctuating waters, still furnished fair fishing in season, but as the water quality deteriorated further, the more hardy rough fishes moved in until now the dominant species is the carp. Even this emigrant is not doing well, because the fluctuating water levels destroy the marginal vegetation on which he depends, so now Lake Wappapello is overpopulated with undersized carp.

The St. Francis, born in the highest area of the state, reaches maturity in the lowlands of Southeast Missouri, leaves the state at the lowest point.

"White bass have been introduced but even this free-spawning species could not find a habitat to its liking, and has made no real contribution to fishing success.

"If the life of us fish is to be improved, drastic measures may be required from man to undo what he has done. Perhaps the reservoir may need to be drained, the entire fish population removed, the basin revegetated to aid nature in freeing minerals now wasted in the rich lake bottom. They could then be released in forms usable in the fish food chain in establishing a proper balance. Even then, man would probably prefer his so-called 'desired balance,' rather than the natural balance. Through selective fishing for the preferred black bass and lack of interest in the less desirable species, he could easily disrupt the proper balance.

"In the meantime, our river keeps rolling along, flooding lowlands which have been ditched, drained and leveed for agricultural purposes, insisting on reclaiming the flood plain which is its by nature. More levees are being built. Fish and wildlife areas continue to be destroyed. It is a vicious circle. Natural balance is not static, it is susceptible to many changes. Nature has the ability to heal scars but she can't take perpetual degradation, brought about by man's changing ideas of a desired balance, without showing ill effects. Nature makes her own diagnosis, writes her own prescriptions and administers her own remedies. Man can only superimpose his ideas of a desired balance when it assimilates nature's intentions. May this, then, not explain the pugnacity of us black bass when we are reminded of man's inconsistencies?

"Nature has endowed all fishes with the ability to produce more of their kind than can reach maturity. Man has long made it a practice to increase competition for unavailable food supplies and housing facilities by planting additional hatchery-reared fishes. Of course, this only tends to increase our food shortages, housing and migration problems. Planting these hatchery-reared fishes for improvement of fishing success is no better than adding more cattle to an already overgrazed pasture in the vain hope of getting more beef to the market. At any rate, planting a truck load of hatchery-reared fish does not represent even the proverbial drop in the bucket, in proportion to our ability to reproduce—if given the opportunity.

"A body of water, like a field not cultivated and properly managed, can become overpopulated beyond its normal carrying capacity with undesirable weed species. Broadcasting additional seed stock does not remedy the situation. In the past, man has further aggravated our problems by maintaining so-called 'length limits' on fishes. In so doing, he interferes with his own pleasure by not permitting adequate harvest of the usable-sized fishes, many of which cannot possibly survive to maturity. Through selective fishing for blue-ribbon broodstock, he puts too much angling pressure on those who are able to perpetuate his recreation. He uses nets, seines, traps, gigs, and other efficient means to an end—the end of *our* noble tribe and *his* sport. He has never learned that he can't have his cake and eat it. Man continues to keep himself indebted to nature, and never pays. He is the greatest of all predators. Creel limits to him mean only a goal to be attained, rather than an aid in rationing a reduced fish crop among the ever-increasing number of interested anglers.

"However, my fry, you should not get the idea that all predation is undesirable. Predation is a necessary part of nature's balance. We of the black bass tribe are essential to a favorable balance of fish population. We aid in controlling overpopulation of undersized fishes in proportion to the carrying capacity of the water through predation on the surpluses.

"Man is now profiting to some extent by his past mistakes. Length limits on fishes have been removed, promiscuous planting of hatchery-reared fishes has been curtailed, daily creel limits have been greatly reduced, and more efficient methods of taking fish have been restricted or prohibited. He should know by now that the black bass is well able to take care of himself, if only given a fighting chance. Man has said that, pound for pound and inch for inch, the black bass is the gamest fish that swims. He has admitted that even though we may fight like unscrupulous roughnecks, we have the traits of aristocrats and stand head and tail above any other fish. Some may be found still fighting in the last ditch, in spite of man.

"There are three tribes of our black bass family. Our own tribe, the Largemouth, is noted for a large mouth extending beyond the posterior margin of the eye, large scales, and beautiful dark lateral lines. Then there is the Smallmouth clan, having a much smaller mouth and scales, and sporting no distinguishing lateral lines. The other tribe is known as the Kentucky black bass. They are easily distinguished by more pointed heads and by broken stripes below a distinct lateral line, do not have a mouth as large as ours, but are much more gluttonous. The Smallmouth clan, preferring clear, swift, rocky streams, has been greatly reduced in our river in recent years, due to

water deterioration. On the other hand, the Kentucky has moved into our realm because they are less selective of habitat, more unscrupulous, and not as sporty as our noble clan. They are, therefore, better able to survive in slum conditions.

"Once was the time when our ancestors had free passage up and down the St. Francis and its tributaries, even into the great Mississippi. They say there are more than 200 different species of fishes found in the waters of Missouri but many of them have disappeared from our province. The walleye, or jack salmon, was once common here. He is still found occasionally in the lower river. I have heard that one weighing 24 pounds, 15 ounces was taken by a fisherman from the lower river in 1941. It has been said that a single walleye may deposit more than 300,000 eggs at one spawning. It is assumed, of course, that a married one could do equally well or better.

"Now I must tell you of the more intimate things of life. The domestic life of the black bass is much more elaborate than is found among many of our neighbors. We are more homeloving; we build nests and care for you young fry. In fish life, the greater the parental care, the smaller the number of eggs required to maintain tribe population. From 3,000 to 10,000 eggs may be deposited in a bass nest at one time, whereas that lazy scoundrel, the carp, who builds no home, may deposit several hundred thousands eggs at one spawning. The eggs and young of all fishes are threatened with many hazards, such as predation, floods, droughts, rapidly fluctuating water levels, turbidity, and temperature changes.

"In early life, the young of our clan are given as much protection as possible by their fathers. The prospective father builds a nest in the spring as soon as sun penetration warms the shallow waters well above 60 degrees. This is his own domain, and other fishes are not permitted in the territory. He does not feed during the spawning period but is very pugnacious, and strikes at any moving thing. Many fights occur among males at this time, and we'll strike at anything resembling a potential enemy. We are most vulnerable at this time because of complete lack of fear, but real sportsmen do not fish at this season of the year.

"Having provided the home a prospective mother desires, we make little effort to attract her. When she comes in the vicinity of the nest, a very brief courtship results in the deposit and fertilization of eggs. When that is completed, the female is driven away, and another is invited in. Thus, three or four females may deposit eggs in the same nest. The hatching period depends upon water temperature, and under favorable conditions usually requires from two to five days. The male continues to guard during this critical period, driving off all intruders, even large carp. With a fanning motion of the tail, he keeps the eggs from siltation, fungus and parasites. Siltation or sudden drops in temperature during flash floods may completely destroy eggs or young. The largemouth black bass continues to care for his young, as I am now doing, until they have learned to feed and care for themselves. From then on, they are just other little fishes, good to eat and therefore subject to cannibalism of their own tribesmen, including their parents, as well as many other predators. Unfortunately for you, parental instinct in our tribe lacks endurance. As you go forth on your own, free to seek the adventures of life, remember well the many dangers which confront you in this changing world of ours.

"Life is not necessarily as dark as I have pictured. Many game fishes have not only survived, but even thrive in portions of the St. Francis river. It is said that there are 'no fish in the stream,' by some anglers who whip the rivers from taproom stools. But there are fish here, and they will bite for those who know where and when to go, and how to fish when they get there. Actually there are many good game fishes in the St. Francis and its tributaries. In Stoudts, Marble, Twelve Mile and Big creek in the upper watershed, Kentucky bass, rock bass, and green sunfish or black perch are common. Fishing for smallmouth and largemouth black bass is good in season and place. In Wappapello reservoir, crappie fishing is good to fair, but carp are dominant. In the lower section of the watershed, Kentucky bass, warmouth bass, bluegill and longeared sunfishes are common. Good largemouth bass fishing may be found in early season. Some smallmouth are around but much of the water in this area is typical rough fish waters. Fishing success, or the lack of it, is a very unreliable index of the number and kinds of fish present in a given area at a given time. Following failures, succeeding attempts are frequently successful. We usually bite in spring because of our hunger following winter hibernation and spawning periods, when we do not feed, and because food is less easily available at this time.

"The kinds and quantities of fishes in the St. Francis river prove that clearwater species can live in muddy water, but that under adverse conditions they may not thrive. Excessive erosion on the uplands due to burning, overgrazing, deforestation, unwise methods of agriculture and neglect of non-agricultural land results in excessive, rapid runoff. This results in contamination of the water by silt deposits. These conditions are aggravated in Southeast Missouri, where the annual average rainfall is from 44 to 48 inches, as compared to an average of 30 inches annually in Northeast Missouri, and approximately 36 inches average for the state.

"Floods have increased, and destroy aquatic life through their scouring action. This is followed by excessive drying of the upland streams. It has been authoritately stated that if woods burning and overgrazing in the uplands ceased, restoration of the streams in the Ozarks would be brought 50 years nearer realization.

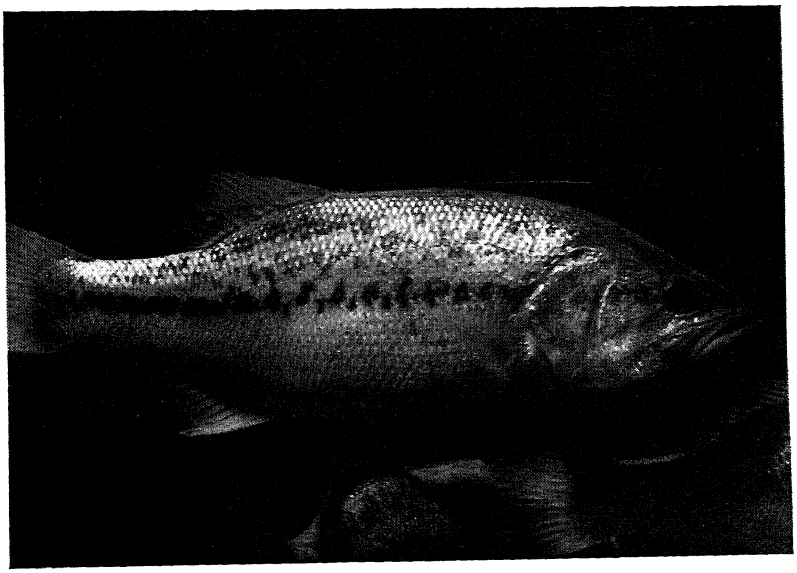
"The development of new fishing waters is a quicker approach to improving fishing success. However, lakes, too, can be no better than their watersheds and many fail to furnish continuing fishing success. They should, therefore, be constructed on carefully selected sites and should be made drainable to facilitate proper management. In the upper basin of the St. Francis, a number of artificial lakes have been developed for recreation. Among these are Lake Killarney on Stoudts creek in Iron county, and Shepherd Mountain lake, which was developed commercially for fishing and other recreational pursuits. Old and New Iron Mountain lakes and others have been developed by the mining industry and furnish some incidental fishing opportunities. In passing, it is interesting to note that Missouri is the leading lead-producing state in the Union, and that most lead is obtained from St. Francois county. Lead was first discovered in Missouri about 1720, and about the same time Mine La Motte was opened in Madison county. Some pollution is caused by the mining industry, but the more serious pollution occurs in watersheds other than the St. Francis.

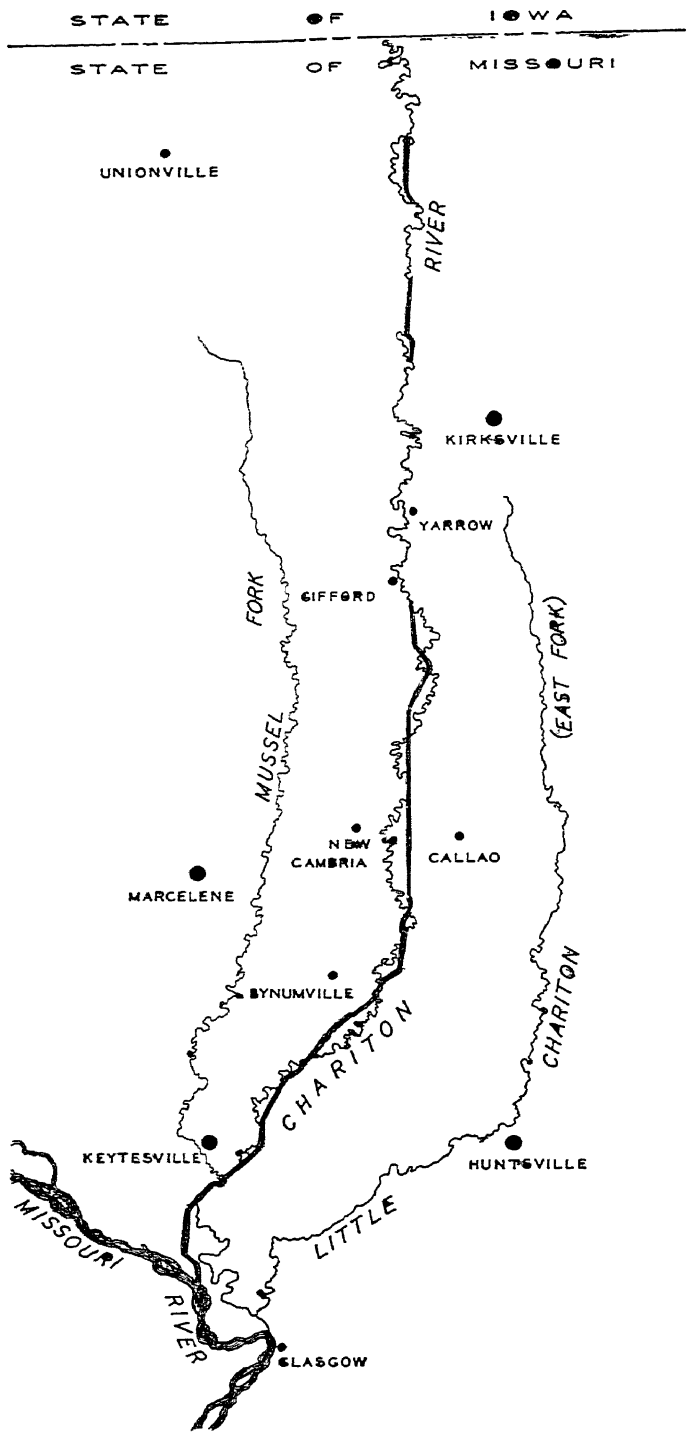
"The character of streams in our watershed is determined by geological formation, topography, and soil types. Only the condition and not the character of the stream is adversely affected by unwise land-use practices. The practices which have proved harmful to the soils, streams, fishes and other natural resources can be modified or corrected. Proper land-use and forestry practices would improve conditions in the streams, and restore the fisheries resources.

"For generations, man has been living on the unearned increment of land and waters. Through obsolescent land-use practices, he has been biting the hand that has been feeding him. This is responsible for the conditions found today by our black bass family.

"Is all this not justification for our ill-natured biliousness? Our savage strike at anything that moves within our realm is only the outlet for our pent-up feelings toward man, our eternal enemy. Certainly no one objects to our pugnacity, and surely we are entitled to some sport and even disgust with man's behavior. Anyway, we are sorry for man, poor fellow.

"Goodby, my dear fry. Go now, before I become hungry."




STATE OF IOWA
STATE OF MISSOURI
UNIONVILLE
RIVER
KIRKSVILLE
YARROW
GIFFORD
FORK
MUSSEL
(EAST FORK)
NEW CAMBRIA
CALLAO
MARCELENE
BYNUMVILLE
CHARITON
CHARITON
KEYTESVILLE
HUNTSVILLE
LITTLE
MISSOURI
RIVER
GLASGOW

A Stream That Went Straight

By Kenneth Hicks

Rivers, like people, can be friendly or hostile, helpful or harmful. Some are docile, gliding along their winding banks without objecting to these walls of restraint, and remaining at peace with man as he makes use of their resources and buoyant qualities. Others become ill-tempered with each change in the weather, each overt act of man, and turn rapidly into raging monsters, ravaging and raping the lands they drain, roiling and boiling along at a fast pace, leaving a muddy, foul-smelling coat in place of the fertile layer of topsoil taken away. Sherman, in his march to the sea, left only temporary marks of destruction; irate rivers leave lasting scars on the land and lives of shore-dwelling peoples.

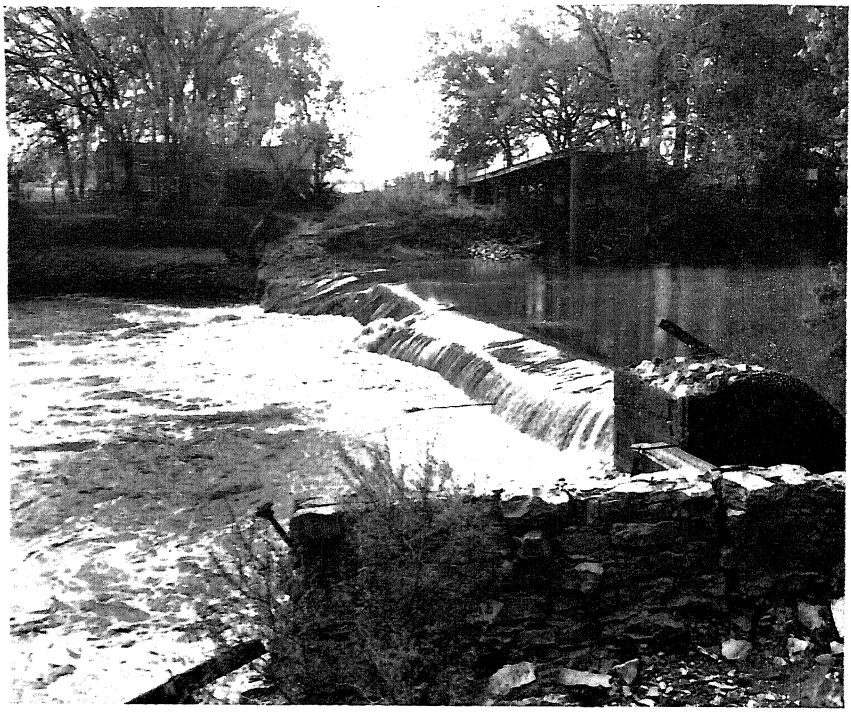
Yes, rivers are like people. They may be kind and useful; they may be unwieldy and distrustful. But regardless of their nature, each has contributed something to a great nation, providing lanes for pioneer travel where none existed, sites for forts when protection was needed, and food for the hungry while trees were felled and lands cleared. The stories of all rivers are alike yet different; their histories vary but their offerings are similar. In spite of man's battles with them, they still go down to the sea in much the same manner and seeking similar channels as they did before man entered the picture.

Before the turn of the nineteenth century, probably the only observers who wondered about a certain river with two mouths were small bands of Missouri, Sac, and Iowa Indians. Having split with the Osages, the U-tsehtas or "campers of the lowlands" were the only ones really familiar with it. Before the Lewis and Clark expedition passed by on the Missouri river in 1804, only a few French fur traders and trappers knew about this tributary of the Big Muddy. One of them, John Charaton, set up a trading post near the lower mouth, and christened the stream "Charaton river" and the settlement "Charaton." This odd stream with the two outlets fascinated some of these traders.

And the Indians told of sacred fishing grounds and unlimited game in its upper marginal forests, adding new allure and enticement to the unknown land upstream. Several years passed, however, before anyone ventured far away from the first settlement. Good catches of furbearers and fish, found in and around the confluences of the streams, delayed a northward migration up the small, uncharted river.

Finally the James Loe family loaded into a small boat and rowed slowly up the winding, sluggish stream. Just south of where Callao now stands in Macon county, this family settled and hewed timbers for a mill. It was a long time before they saw anyone except occasional Sioux hunters. When other families followed them, it was inevitable that old Charaton's population would dwindle as the rumors spread about the rich resources "up the river."

As if guarding against this invasion of its virgin borderlands, the river struck in 1825. Bouncing out of its banks, no longer content to remain its

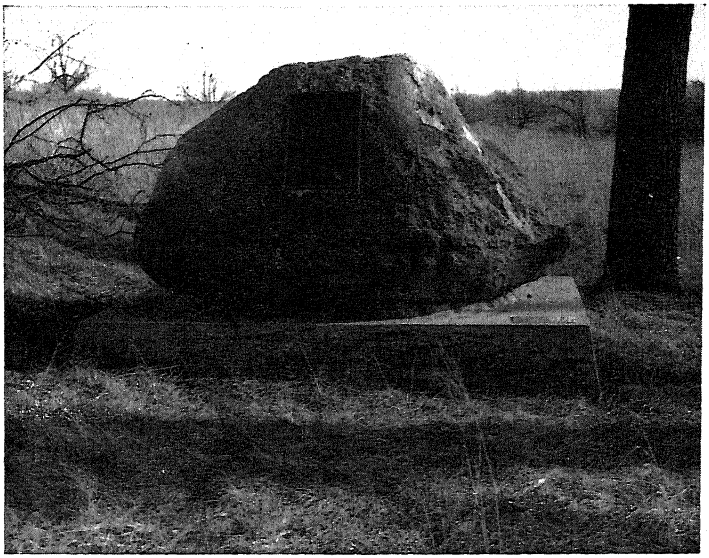


The old mill dam at Yarrow, on the Chariton river, photographed during a period of high water.

sluggish self, the Chariton (as it was by then spelled) flooded all of the lowlands and forced everyone to the hills, taking away their homes and improvements, their traps and equipment. Rolling downstream, the river swept into the unsuspecting town of Old Charaton, inundating the entire settlement. So great was the damage done by this aqueous blitzkrieg that the old trading post never regained its former size. An epidemic of malaria followed in the wake of the water, taking a heavy toll of the hardy pioneers. Mosquitoes thrived in the stagnant sloughs and lowlands, making life miserable and unhealthful for the survivors of the flood.

Haunted by fear of the river and weakened by disease, most of the remaining families of Old Charaton moved in 1840 to the present site of Keytesville. There they founded the Town of Chariton, calling it the county seat of all the explored lands along the east shore of the lower Chariton river.

But not all men and women were routed by the swirling wall of water hurled against them. Immediately after it had receded, a few started upstream away from the disease and stench. Their pirogues (boats hewn from cottonwood trees) carried them as far north as present-day Adair county, three families reaching a point about six miles west of where Kirksville now stands. Historical records show these were the first white settlers of Adair county. A monument has been erected on the Collett farm, marking the site and giving the date (1828) when this new colony was established. The farm still belongs to the Collett family of Kirksville.



Lonely beside the windy road stands this boulder-monument. The plaque embedded here reads: "1828—Site of Fort Clark and 'The Cabins' —The First Settlement in Adair County." The site for the monument was donated in 1925 by the late Ira D. Collett of Kirksville, descendant of a pioneer family.

Hardly had these families become settled when blood-curdling whoops and yells came from the river and some 70 Indians of the Iowa tribe surrounded the log buildings. The chief, Big Neck, came to discuss the purpose of this unexpected visit; he wanted payment for trespass on tribal hunting grounds. The Indians demanded hides and grain—or else white scalps. The settlers stalled for time. Though the Indians kept the little settlement encircled, one white man made a daring escape under the cover of darkness and started downstream in a boat to the post at the mouth of the river.

The next day he was missed by the redskins, who logically decided he had gone for reinforcements. Having come from upstream, they did not know how far he had to go for help, nor know that he could not possibly get back for several days. Instead of killing the five men and women who had stayed behind, the Indians ran for the river and paddled swiftly up towards their own lands to the north. Seeing the confusion in the ranks of the savages, the whites also rushed to their boats and didn't stop going down until they landed at Old Charaton by the Missouri river. This event delayed further settlement of Adair county until 1830, when other families came in to seek the rumored riches of soil and forest.

Again in 1844 the Chariton raged at the encroachment of man upon her plains and fertile lands. Old records disclose that this was probably the most pernicious flood ever recorded on this stream. We are told that the water was six feet higher than in 1825, covering the entire valley with a watery

blanket 5 to 15 feet deep. Losses were probably greater in proportion than in either of the big floods of 1903 and 1909. But again high water failed to deter or discourage these Missouri colonists.

A new settlement sprang up in 1858 at Callao (Macon county) which the first postmaster named by blindly placing his finger on a South American map and landing on the Pruvian seaport. Another group founded Stockton in 1864. It was later known as New Cambria, being renamed by a Welshman in 1880. This spot became momentarily famous for a short-lived gold rush. The mineral turned out to be a worthless glacial deposit.

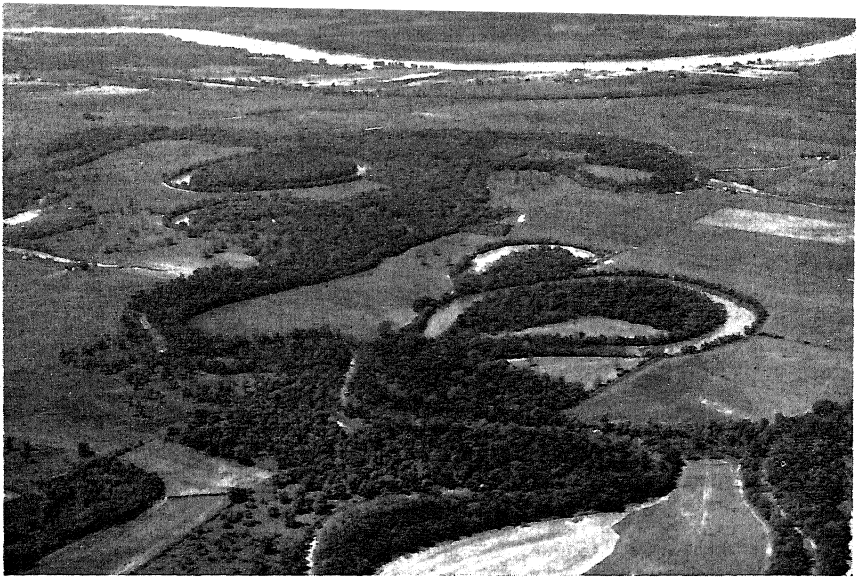
Although many sought other wealth, the land was paying off in grain and produce; the hills and woods were providing pelts and meat; and the river was supplying not only fish but a highway for barges and keel boats which plied back and forth with raw products and finished goods. Although this unpredictable stream made occasional raids on the possessions of the settlers, it remained the lifeline between them and the other world to which they no longer belonged.

Even though many small craft preceded her, the *Independence* was credited with being the first steamboat to reach the mouth of the Chariton river. It caused considerable excitement among the Indians, who reported it as a big serpent belching fire and smoke from the surface of the water. Then small steamers began to venture from the Missouri into the larger mouth of the Chariton, which Lewis and Clark recorded as about 70 yards wide. When they could go no further, they were met by barges and keel boats from upstream, loaded with bacon, corn, tobacco, beeswax, furs and tanned deerskins to be taken to New Orleans. Some of these small boats, capable of carrying 15 to 30 tons, were built annually and made the entire trip to Louisiana without shifting their cargoes to the bigger steamboats. Managed only with poles and oars, they covered about 10 miles per day in favorable weather.

The end of the long journey down the Mississippi river brought a great deal of satisfaction to the travelers when the loads were sold. Some of these early deals were consummated at ridiculous prices if compared with the markets of today . . . shaved deer skins, 40¢ lb.; beaver skins, $189 per 100 lbs.; lynx skins, $500 per 100 lbs.; otter pelts, $450 per 100 lbs.; and bear hides, $3 per 100 lbs. Besides these sales, the traders redeemed the *peltry bon* currency they had collected in transactions with wilderness merchants.

One of the great drawbacks which limited the take of fish from the river was the lack of equipment. When hooks, lines, or nets were obtained, they were stored and treasured like family jewels. Although most fishing was done for food, in some settlements there were spring fishing expeditions organized merely for sport. In the fall, hunting trips were made which sometimes lasted for a week or even ten days. This gave the hunters an opportunity to explore new territory and often resulted in later moves for their families.

Even as early as 1840 fish traps were in use in the Chariton river. About four miles east of the present town of Bynumville, there was a rocky, flat bottom in the river. Rocks and logs were used to make what was known as the old McClure fish trap. Large catches of fish were made here. This became a favorite picnic spot and was used for many years by the early residents of the adjacent countryside. Although guarded jealously by its owners, it changed hands several times. Unusual stories of fishing came from the Indians, who

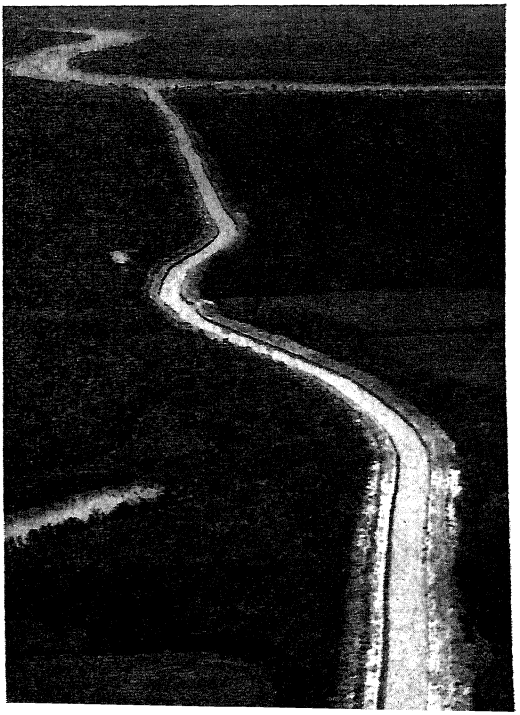


The old mouth and the new, on the river that was reformed to suit Man's ideas. Man has begun to question the exactness of his information, however; he is beginning to wonder if neatness is the *summum bonum* of Nature. The straightened channel gets rid of the water with dispatch—and some occasional violence. The latter was not foreseen.

These photographs of the old Chariton that Nature made and the new Chariton that Man designed were made on the same day in May, 1949.

They illustrate graphically what Kenneth Hicks was thinking about when he named his story "A Stream That Went Straight." For this river has been shortened and confined; it is today a drainage ditch over much of its watershed, reaching from Iowa through Northern Missouri.

The camera in each of these shots is pointing south; the large stream in the upper portion of the photos is, of course, the Missouri river.



claimed their ancestors had a favorite fishing place in a lake that lay at the forks between the mouths of the river. According to the Encyclopedia of the History of Missouri, evidence was still visible in 1901 that would substantiate some of these tales.

While the river was making its contribution to the welfare of the people living along her banks, the bordering forests and high prairies were also offering their products. Bear, elk, deer, wild turkeys, squirrels, quail and prairie chickens were plentiful and could usually be found in some form in the cabins or sheds of these small exploiters.

In order to keep their shootin' eyes in trim, "beef shoots" were held in these early days of Missouri history, these events being comparable to our modern shooting matches. Such "shoots" were not considered wasteful of precious shot and powder because they improved marksmanship.

It is quite certain that wildlife played an important part in the selection of sites for trading posts, small settlements and homes. The search for fur-bearing animals and large numbers of big game species probably had more to do with exploration of the Chariton valley than the search for farm or mill sites. The Bureau of Labor Statistics reports that, in 1898, a total of 34,199 pounds of game and fish were shipped from Chariton county, in addition to 58,596 pounds of hides and pelts.

Today these once game-populous hills and upland prairies bordering the valley have no bear or elk, only a few remnants of prairie chicken flocks remain and an occasional replaced deer is seen. The wild turkey has long been absent from his old roosts. Quail and squirrels, however, remain abundant where their environment is still pleasing. The beaver has returned within the last decade.

Fishing methods in the river have changed and so have the species inhabiting it. Where the bass and other game fish haunted dark holes of the former winding, sluggish stream, now the channel catfish, flathead and carp strive to feed and hide in a shallower, much-straightened watercourse. Only one old mill-dam fishing hole remains—at Yarrow—although the building and machinery conceded defeat to the river a few years ago and returned to the water in twisted pieces. The picture of the river has changed radically.

In 1904, a farmer named Peter Vitt started a subscription campaign and a survey to determine the cost of straightening the channel of the Chariton. After experiencing the 1903 flood, many of the landowners were seeking relief from the oft-rampant stream. Finally a total of $180,000 was raised to tame this winding, crawling monster into a bigger, faster-stepping ditch.

In Chariton county alone, its dragon-like trail of 300 miles was straightened to a mere 33 miles. The wisdom of this venture is still questionable in some quarters, although a statement from the History of Northeast Missouri reads: "In recent year the Chariton river, a very treacherous stream, has been straightened and shortened to but a fraction of its original length, to the great benefit of those owning property along its banks."

The old channel, with a length of about 900 miles from the Iowa state line to the mouth, has been lessened to 138 miles. The Army Engineer report for 1948 states that even this figure will be lessened to 95 miles.

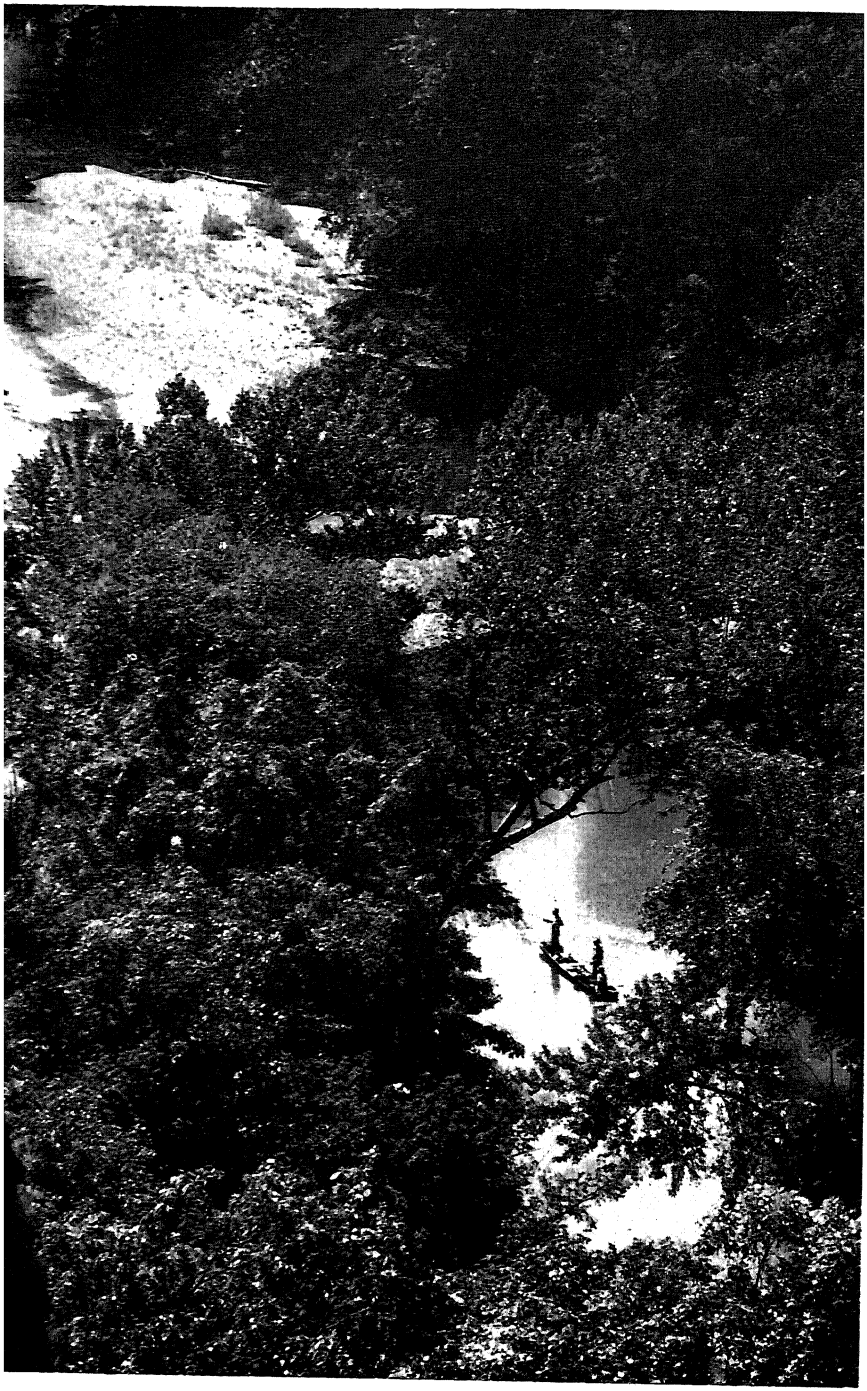
Its tributaries, the Little Chariton, Mussel Fork and other smaller creeks, do their best to feed life-giving transfusions into the big artery, drawing from

the narrow watershed which drains only 3,040 square miles of land in both Iowa and Missouri. During dry summer periods and prolonged cold winters, many miles of the once-permanent stream may be traversed on foot by carefully following the meandering trickle, which is all that remains. It is true that the new, steep-sided channels carry more water at a faster rate than formerly. But what of the people and lowland life downstream? And where are the old fishing holes, the tree-lined banks, and the valuable otter? They helped feed, house, and clothe our last-century kin, only to be swallowed up in the iron jaws of mammoth shovels or washed into oblivion by a modern method devised to rid ourselves of unmanaged water. How often that same water would be cherished on the land from whence it came! But that is another story.

* * *

Yes, rivers are like people. They must be adjusted to fit into the ascertained needs of society. If unruly, they must be controlled; if tranquil and quiet, they are sometimes left alone to work out their own problems and pattern their own course.

So the battle goes on. . . . The river seeks the sea by following the path of least resistance, and in so doing, over-runs the property of man. Man retaliates with harness of wood and stone, with obstructions of concrete and steel. Neither ask nor give quarter. Both wish to be left alone. When will the conflict end? Will it be only when there are no more rivers—or no more men?



If You Were God--An Epiloque

By Carl Noren

Pretend you are a god, sitting on some celestial height. Perhaps you can visualize yourself in a reflective mood, your face resting on your hand, leaning forward with your elbow supported on your thigh, like Rodin's "Thinker." Below you, bands of migrant clouds move along but your all-seeing eyes are looking through them. There is a break in the cloud formation that focuses your eyes upon a planet called Earth and then upon a part of Earth called Missouri.

Your lordly lips smile slightly as you remember that many eyes are turning to Missouri these days: there are many people on Earth who guessed wrong again and a man from Missouri surprised them at it. Now these people are taking a second look, as you are, hoping to find an explanation.

But you, as a god, are not concerned with politics. Your eyes narrow to sharpen the view of what appears, from this height, to be a series of branching, silvery threads: the rivers of Missouri. You quickly review the history of these streams in your mind. Being omniscient, you know what men have done with these rivers in the past, and you know what they will do in the future. Many of these men are proceeding confidently—preparing to make mistakes. Some of them will create new mistakes, some will make the errors that have been repeated numberless times in the past. You shake your head sadly, in concern for these little men.

(No, all's not right with the World. It is too bad we can't be gods with infallible vision, so that we could chart Man's future and save him from errors. But we are little men, and sometimes we act completely the part of little men—yet again we struggle to attain god-like stature, and we try to judge impartially and justly. So, admitting that we are as subject to human frailty and fallibility as the next one, let's try for the god-like stature. Climb back up on that celestial seat for a better view of the rivers of Missouri, and then . . .)

It doesn't take but a glance, and you find yourself muttering, "Things sure aren't what they used to be." You don't have to look back far to learn that. Why aren't things the same now? You'll have to sit up a little straighter in your celestial chair to see that one, but it is pretty clear, too. Most of this change is the result of the exploitation of the land and the products of the land. Until recently, few people gave any thought to conservative use of their resources in a fashion that would give them what they wanted without destroying the source of their gifts. They kept pounding so hard on the goose that laid the golden eggs that, in some places, the poor old bird has just about died.

Look back over this series of stories about the rivers of Missouri. In every instance the early history recorded a bountiful nature, with one of the world's richest populations of game and fish. Excellent forests of hardwood and pine covered much of the southern part of the State; to the north and

west, prairies of native grasses carried large concentrations of buffalo and elk and upland birds. There were many marshes and swamps that swarmed with waterfowl. These were diverse lands from which our rivers were formed.

What about the rivers themselves? Were they all much the same then? Were they all streams that rippled along in clear, constant peacefulness? No, those streams differed from each other markedly then, just as they do now. Those streams reflected the land through which they flowed. The Missouri, with its source in the Montana Rockies, was the "Big Muddy" even then. Before it reached this state it had taken on its tawny color from the particles in suspension which did not settle out. The other streams didn't have the turbid, yellow flow of the Missouri, but there were all graduations of color and clarity, depending upon the watersheds from which they were formed. The important thing to remember is that *all* of them have deteriorated since the first settlers came to Missouri. The early records show that streams which today are almost always cloudy and murky were described then as clear-flowing streams. These waters originally yielded bass and other sport fishes; today, unfortunately, this degradation of the streams reflects a degradation of the land. You are doubly concerned because this deterioration of the land affects man's welfare even more than do those streams which have played such a vital part in his development of this country. The land has been abused and the streams show it.

There have always been floods. Sitting up there where you can see into the past you find that many of these streams rose out of their banks and covered large areas of bottomland. Some of them flooded less frequently than they do today. But there was a bigger difference. The streams, the land, the forests and the wildlife had learned to live with each other. The land fed the streams with clearer water and fed them more slowly. Animals and plants that were adapted to wet places lived in the wet places. When the streams rose from their banks they spread over bottoms that were grown up in trees and other plants that checked the flow of the water. The runoff was less rapid, and productive silt was deposited over the bottoms. It was a prosperous inter-relationship.

Man has changed much of this, you note. He has removed the timber from the bottomlands. He has plowed the uplands. He has confined the river channel and he has straightened it. All of these things make for more runoff and faster runoff. The river rebels against this treatment; it rises from its channel quickly in times of flood and rushes over the bottoms at a rate which, in many places, tears out deep gouges in the land. Instead of silt, there may be a deposit of sand and gravel left when the river subsides. But Man continues to plant dry-land plants in the wet places, and the rivers exact a rental charge annually, taking payment in crops, labor, and equipment, from one river valley or another. Man has staked his claim to the bottoms for his corn and wheat land, he has claimed the rivers themselves for their power, and the rivers continue an endless fight for the squatters rights and flowage easements granted them by nature.

(It is time that you stood up from your celestial chair and took a stretch. You are going to need it before you get a clear-cut answer to this problem of what the fate of our rivers should be, and you are going to need infinite knowledge and wisdom, too. Now, maybe you'd better stand up on that seat for a better look. Let's see how this problem looks to ordinary men, and at the same time we'll look at the men a little bit, as we try to learn . . .)

Essentially, it is a problem of how to use the land and its waters. Men will have to learn to live with their rivers, or make the rivers live with them—or, possibly, work out a compromise agreement. In planning the use of the waters there are many problems, and there is much difference of opinion on how the rivers should be used. Water is an indispensable essence of life—every living thing depends on water. Its importance isn't recognized until the supply is critical—and then men, animals and plants fight and die for it. Too much of it can be almost as deadly as too little. A resource that is so critical to life itself cannot be materially changed without affecting many interests. Consequently every move which affects the rivers of Missouri is watched by many eyes.

It seems strange that a resource which affects so many people and so many things has had no coordinated planning for all interests until very recently. There was no program to develop a river or a river basin to meet the needs of the varied interests involved. Individual interests, special interest groups, and government agencies with limited authority all dabble in the streams of the state. Undoubtedly there have been times when some narrow interest has benefited at the expense of another interest or at the expense of the common good, under such an approach.

Individuals and agencies concerned with river development plans often have been severely criticized for neglecting some phase of planning or development, and frequently there has been justification for complaint. Too many times, however, the blame cannot be laid fairly upon the individuals or the agencies. Usually they are working within a limited sphere of authority or for some limited interest. They have neither the legal means nor the money to work out plans and programs that take a broader viewpoint, even though it may be their desire to do so. It is only recently that people have begun to demand river basin planning on a broader base, and as those demands grow it appears that more means will be provided for developing well-rounded programs.

River basin development programs have become largely a Federal responsibility. It is a natural and necessary thing that the national government participate in the programs to properly develop our river basins. This is because rivers and basins recognize no state boundaries, and it is impossible to plan well for the management of a drainage area without planning for it as a single unit. Obviously, this cannot be accomplished on a state or smaller governmental level, since many of our important rivers drain from more than one state, and the Missouri river drains from ten states. There was a time when individuals, drainage districts, and the state or smaller governmental units tried to cope with the problem, but it was finally recognized as being a national headache.

In Missouri, the Corps of Engineers of the Department of the Army is the agency most active in planning and developing river basin programs. They derive their authority from the Congress, which directs that investigations be made and programs be carried out. The Corps of Engineers under this authority is concerned chiefly with problems of flood control and navigation. In situations where they are planning the construction of reservoirs, the feasibility of power is considered. Other aspects of river basin development are secondary, and are considered only incidentally. Their activities are limited to the

streams themselves, and any programs in the uplands fall within the authority of another Federal agency—the U. S. Department of Agriculture.

The approaches to flood control by these two Federal agencies is quite different. The Corps of Engineers plans to control floods on the streams themselves by various engineering measures. Levees, flood storage reservoirs, and channel straightening and clearing are among the methods used. The U. S. Department of Agriculture plans to achieve flood control by the establishment of land use practices on the uplands that result in waterflow retardation. This is accomplished by the development of terraces, sod waterways, farm ponds, reforestation, fire control, grazing control, and crop management practices that are helpful in retarding run-off.

The Department of Agriculture has divided the responsibility for these programs between the Soil Conservation Service and the Forest Service. In addition to its program of land management the Soil Conservation Service may also propose the installation of small detention reservoirs and gully control structures that have construction requirements beyond the abilities of the individual farmer.

Does that solve the problem?

(You look at that picture from your heights, and think: "Fine. They're planning to catch the water on the uplands, and what they miss there they are going to control on the rivers themselves." But wait a minute. You tune your supersensitive ear. Yes, there is still a buzz of dissension down there.)

What's the matter now? Well, some people still don't like it. For one thing, a lot of people don't agree with the idea of having this planning done by a couple of Federal agencies alone. They want to have something to say about it from the viewpoint of their state and their own particular locality and their own particular interest, and they would like to have additional Federal agencies participate. They agree that it is wise to plan for a watershed in its entirety, but they want to take part in the planning, since it is a local problem as well as a national problem. Couldn't these state interests as well as other Federal interests get in on the planning?

Well, starting back in 1944, this idea was tried out in what is known as the Cooperative Meramec Watershed Investigation. Under the leadership of the now defunct National Resources Planning Board there were 14 Federal and State agencies that got together to try working out the best possible plan for development of the Meramec basin. There were agencies representing every interest that it was thought might have something to contribute to such planning. It seems probable that no river basin was ever so thoroughly studied, and a lot was learned about watershed planning and interagency cooperation. It was a kind of testing ground for watershed planning. However, with the experience behind them, most of the agencies aren't completely satisfied with the result. One trouble with the approach was that each agency was putting forth its own program, and it was difficult to find agreement on which parts should be retained or expanded, and which parts should be eliminated. The final report on this investigation is yet to be written, and it may be that some of these difficulties will be resolved.

You don't have to look back far to see that the experience gained in the Meramec investigations was valuable, and undoubtedly aided in showing the way to better planning elsewhere. This is reflected in the recent studies made on the Osage basin in Missouri, and on the studies now being made on the Grand river watershed.

There were a lot of Missourians who weren't satisfied with the original plan of development for the Osage basin. It consisted of a program of dams and levees for flood control, power, and navigation. Many of these people felt that too much of the program was devoted to flood control on the downstream areas below the Osage, and to navigation. And, as in the Meramec, they wanted to see a wider representation of interests involved in making the plans for this huge drainage area. They wanted the State to be in on the planning, and they wanted additional Federal agencies helping in this proposed development. There was no provision for a program which would reduce or retard the run-off of surface water and soil from the uplands. They wanted such a land program to reduce surface run-off as much as possible, and then a program of flood control on the streams might be obtained with smaller dams and levees. They wanted to be in on the planning of the location of these reservoirs so that they might help select sites that would do less damage to the resources of the area.

As a result of this feeling, then-Gov. Phil Donnelly held conferences with General Pick of the Corps of Engineers and representatives of various Federal and State agencies for the purpose of finding a plan that more nearly met the varied interests concerned. It was decided to divide the planning into two principal phases. One of these approaches was to be concerned with developing a plan for a land conservation program on the uplands for waterflow retardation and other benefits. The other approach was to restudy and relocate the system of dams in the basin in accordance with the findings of the various agencies participating. The locating of the dams was principally the function of the Corps of Engineers and the State Division of Resources and Development. However, other agencies were kept informed on potential dam sites, and it was possible for them to indicate any particularly favorable or unfavorable features of the sites which might, in turn, influence the final selection.

At times there were as many as 75 workers from 15 different agencies engaged in making this survey. They began their work in May, 1947, and had completed the study by December of the same year. Workers from the Missouri College of Agriculture, the U. S. Department of Agriculture, and the State Department of Agriculture took part in the investigations. The State Geologist advised on the effect of the proposals upon mineral resources. The Federal Power Commission worked with the Corps of Engineers and the State Division of Resources and Development on the power possibilities of dam sites. The State Highway Department, the State Board of Health and the Public Service Commission took part in the investigations, so that these public interests would be served. The Conservation Commission and the U. S. Fish and Wildlife Service worked together on the effects of the proposals on game, fish and other wildlife. They had an opportunity to evaluate the effects of potential dam sites as they were proposed, and to indicate the ones that would be most desirable in a reservoir plan. The Conservation Commission outlined a forestry program for the basin, at the request of the Soil Conservation Service, as part of the land program for the basin.

All in all, the Osage basin investigation probably set a new high in cooperation among various agencies planning river basin development. Naturally, under such a system, everyone didn't get what he wanted, but it came closer to achieving the aims of many groups than had any previous attempt of this kind.

Both the programs of the Corps of Engineers and the Soil Conservation Service will have to go to Congress for approval. They are submitted as separate programs, but it is hoped that they can be developed simultaneously. If this program should be adopted, Missouri would save nearly 125,000 acres of productive bottomland from the inundation that would have occurred under the earlier plan—approximately 37 per cent less land under water. And there would be a program on the uplands that would have many incidental benefits over and above those from flood control. Wildlife, for example, would benefit materially from land practices that improve food, cover and water.

Following the completion of the Osage basin investigation a similar planning procedure was set up for re-study of a program for the Grand river basin. This study was begun in April, 1948, and was completed in 1949.

(Now, is all right with the World? With interagency planning well under way there shouldn't be any more trouble. But if you stay up here watching that scene on Earth long enough you'll begin to believe that men never seem to get things just exactly right on anything. At least they're never satisfied.)

Now you can hear talk that these programs aren't in balance. The Corps of Engineers has been carrying its program of flood control forward on the streams for a number of years. They have built two flood control reservoirs that are wholly in Missouri, and a third that extends from Arkansas up into Missouri. They have another dam under construction, and a number of others authorized or proposed.

On the other hand there isn't any place in Missouri where a land program for flood control has been established. To date there hasn't been a single program authorized, or funds appropriated, for flood control by retardation of run-off in the uplands.

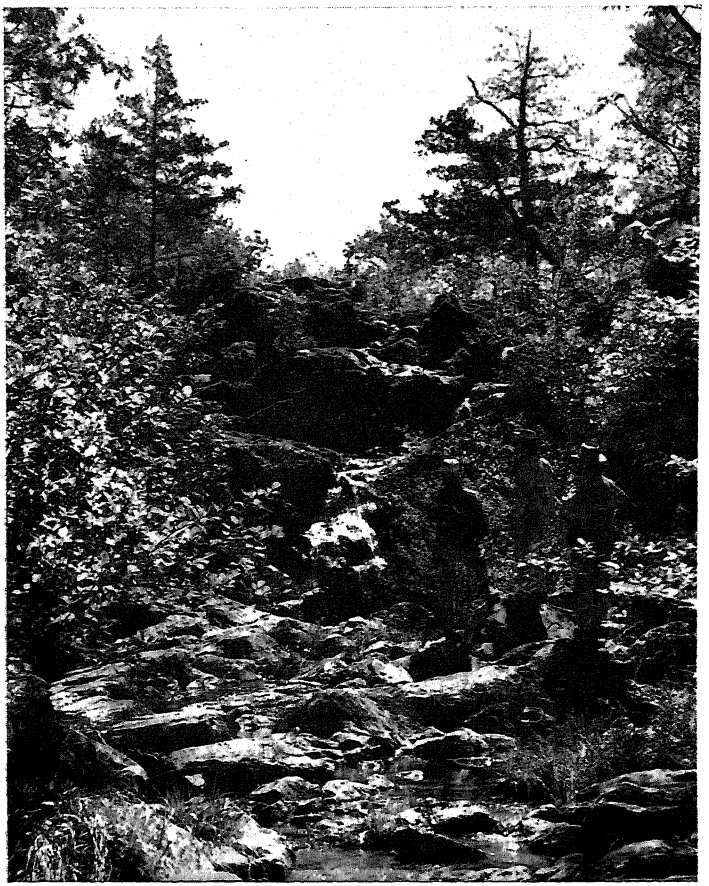
And what about people who are interested in natural streams—the ones who like their hunting, fishing, and nature the way Nature planned it?

"What!" you say, "I thought we just got through solving those problems. We just left everybody working this thing out together on the Osage and Grand rivers." Well, that's right. But that didn't solve all the problems of our rivers by any means.

You begin to wonder if we need that Missouri Valley Authority that you've heard some people talk about. But then you take a closer look, and you see that a Valley Authority wouldn't solve this problem either, since it wouldn't reach into that part of the State where the problem exists.

First, take a look at that map we have in the back of this book. On it you can see the flood control reservoirs that are in existence at the present time in Missouri. Then there is another group of reservoirs shown, which have been authorized by Congress for construction. Construction can begin on reservoirs in this group when Congress appropriates the money. Then there is a third group which has been studied by the Corps of Engineers and proposed for construction, but which has not been authorized by Congress.

All of these reservoirs have not been planned or built by one group of Army Engineers. The Army divided the country into district offices, with territory assigned on the basis of drainage areas. For example, all those streams along the southern edge of the State that form the White river basin are under the jurisdiction of one district engineer. Those streams that drain



ONE SOURCE OF A RIVER

into the Missouri river are under the jurisdiction of another district engineer. In fact, there are a total of 7 Army Engineer districts that lie partly in Missouri, each with distinct drainage areas under their supervision. This is a sensible arrangement from their standpoint but, just by chance, Missouri's stream system is such that it causes the State to be divided into an unusually large number of districts.

Now, although some flood control plans are being re-studied in a fashion that permits a number of interests to participate, it isn't true all over the State. The only reservoir plans being studied on this basis are on those streams that drain into the Missouri river. This includes the rivers of the Osage basin and the Grand basin, already mentioned. In addition it includes the rivers of the Gasconade basin, where two reservoirs are now proposed, and which, presumably, will be reconsidered.

ANOTHER SOURCE OF A RIVER.

Look again at the reservoirs proposed or already built along the southern edge of the State. They are designed entirely for flood control and power. No other interests had an opportunity to participate in the selection of projects for this area.

Listen to the names of the streams that would be impounded by these projects. There are the White and James rivers, that are affected by the Bull Shoals and Table Rock projects. When those dams are completed, practically every mile of the White river in Missouri will have been eliminated as a river. One of these dams, Bull Shoals, is already nearing completion. The North Fork river is already impounded by Norfork Dam. On the Eleven Point river the Water Valley Reservoir is authorized for construction. On the Current river there would be two large dams to form the Blair Creek and Doniphan Reservoirs. On Black river, Clearwater Reservoir has been completed.

Look to the north and you find impoundments authorized for the Gasconade and Meramec rivers. The Niangua is already partially impounded.

Do those names mean anything to you? They are names of the major clearwater streams of the State. Now you can begin to see the picture. These are the Ozark streams for which Missouri is famous. These are the streams that are both landmark and trademark. These are the streams that bring fishermen a thousand miles for what they prize as the country's finest smallmouth bass fishing. These are streams that are famous for their springs; springs so fabulous and numerous that only the very largest are commonly known. These are streams that bring peace and contentment to thousands because they are undeveloped. These are streams that are prized simply because they are pure, unadulterated rivers.

Yes, Missouri is fortunate in her wealth of rivers and, relatively speaking, she is fortunate in the sound planning that has been accomplished for some of her streams. But what has happened that we should have reached a condition in which not one major Ozark stream is to be left unimpounded along its entire length? These flood control and hydroelectric projects are given us in exchange for our rivers because "they are economically justifiable." In other words, for each dollar expended on them they will return one dollar or more, and their construction is, therefore, justifiable.

It is a sound policy within certain limits, but would you sell your home for a profit, even though it left you without a place to live? Would you sell your last Ozark stream?

(No, all's not right with the World. It is too bad we can't be gods with infallible vision, so that we could chart Man's course and save him from his errors. But we are little men, and sometimes we act completely the part of little men. At other times we struggle virtuously to attain god-like stature, and we try to judge impartially and justly.

(Admitting first of all that we are as subject to human frailty and fallibility as the next one, let's try for the god-like stature. Climb back up on that celestial seat for a better view of the rivers of Missouri, and then decide . . . If you were a god, would you preserve some Ozark streams?)

ABOUT THE AUTHORS . . .

ALLEN, Edgar (*Current*) is district supervisor of the Ozark Division and a veteran conservation agent whose beat was on the Current. He is now living at Willow Springs.

BRUTON, Harry (*White*) is field service agent for the Southwest Division, a native of the country and one who has floated White river for many years.

CRAWFORD, Bill T. (*Meramec*) is an assistant biologist in the mammal unit of the Commission's Game Section; he helped make a survey of the watershed about which he writes.

HERNDON, Dr. G. B. (*St. Francis*) is Chief of Fisheries, knows every stream in the state—and chose his river as the one about which he wanted to write.

HICKS, Kenneth (*Chariton*) is chief of Field Service, a former conservation agent and has lived in the country about which he writes.

NAGEL, Werner O. (*Salt*) is a native of the watershed, a former zoology instructor at the University of Missouri, administrative assistant in the Game Section and a man of rising fame in the conservation writing field.

NOREN, Carl (*Osage* and *If You Were God*) is administrative assistant in the Fisheries Section and an authority on the water resources of Missouri. He has represented fish and wildlife interests of the State in watershed planning for the Missouri Valley area.

PIPPIN, Dru L. (*Gasconade*) is vice-chairman of the Conservation Commission, a soils expert, insurance man and resort owner, with roots deep in the Gasconade valley. His home is near Waynesville.

RESINGER, Cliff (*Black*) is the conservation agent in Wayne county of the river country, and knows that stream like a book.

SAULTS, Dan (*Mo.-Miss.*) is chief of the Commission's Information Section and editor of the MISSOURI CONSERVATIONIST.

WELLS, Ray (*Grand*) is field service agent for Northwest Missouri and a student of the Grand who made an extensive survey before writing on that river. His home is at Cameron.

ABOUT THE ART WORK . . .

Most of the pictures in this book were made by Rex Gary Schmidt and Robert E. Holliway, Jr. The aerial view of Bagnell Dam is the property of Resources and Development. Maps were drawn by Jim Schuller, Doris Maxwell or Jim Keller, with the exception of the fold-in map at the back of this book, which is reprinted through the courtesy of the State Division of Resources and Development.